EFFECT OF INVESTMENT DECISION ON PROFITABILITY OF DEPOSIT TAKING SAVINGS AND CREDIT COOPERATIVES IN NAIROBI COUNTY, KENYA

BY

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A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT) IN THE SCHOOL OF BUSINESS.

KCA UNIVERSITY

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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I do hereby confirm that I have examined the master's dissertation of **Dorcus Mwende** and have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

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ABSTRACT

This study sought to evaluate the effect of the expansion decision on the profitability of SACCOs in Nairobi County; to assess the effect of replacement decisions on profitability of SACCOs in Nairobi County; to evaluate the effect of renewal decision on the profitability of SACCOs in Nairobi County; and to assess the effect of research and development decision on the profitability of SACCOs in Nairobi County. This study intent was to determine how investment decision impact the profitability of SACCOs in Nairobi. The study population was the 40 DT- SACCOs in Nairobi County, Kenya. The independent variable for the study was investment decisions with four measures: investment in expansion decision, investment in replacement decision, investment in renewal decision and investment in research and development. Profitability (ROI) was the response variable which was the primary focus. The study utilised secondary data from 2018 to 2022 (4 years) on annual basis. A descriptive design together with multiple linear regression model were used for the analysis of the variables. For this analysis, the researcher used STATA software. The finding gave an R- square value of 0.189 approximately 18.9% of the variation in the dependent variable can be accounted for by the independent variables. Additionally, around 2.74% of the variation in the dependent variable can be attributed to differences between groups or categories, while overall, about 12.4% of the variation in the dependent variable remains unexplained. These analysis further revealed results show that the F statistic was substantial at 5% level with P=0.000. This shows that the model was suitable for the study to provide an explanation of the variables. The results also showed that investments in expansion and renewal decisions produced positive and statistically substantial values for this study while investments in replacement and research & development were found to be statistically insignificant determiners of profitability. This study recommends that measures should be put in place to enhance investment in expansion and renewal decisions. As this two have a substantial influence on profitability of DT-SACCOs in Nairobi.

Key words: investment, profitability, replacement, renewal, expansion, research and development

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Contents

DEDICATION

With utmost humility, I dedicate this research project to the Almighty God, the source of knowledge that has guided me on this journey. My deep appreciation goes to my loving parents, Mr. and Mrs. John Mbuvi, for their unwavering support. Most significantly, I dedicate this work to my beloved son, Keylan, whose constant presence fills my life with hope, inspiration, and joy. I am sincerely grateful for your prayers and encouragement, as well as the guidance and support from my lecturers and friends. May God bless each and every one of you?

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ACRONYMS AND ABBREVIATIONS

CBK	Central Bank of Kenya
DTS	SACCOs
EXP	Expansion Decision
FOSA	Front office Savings Account/Activity
KUSCCO	Kenya union of Savings and Credit Cooperatives Ltd
MDD	Modernization decision
MFIs	Micro Finance Institutions
REN	Renewal
R EP	Replacement Decision
RND	Research and Development
S & D	Surplus and Deficits
SACCOS	Savings and Credit Cooperative Societies
SASRA	SACCO Society Regulatory Authority
SMEs	Small and Medium Enterprises

TERMS AND DEFINITIONS

Expansion decision Refers to the process of determining whether a business should expand its operations, either by opening new locations, entering new markets, or diversifying its product offerings. It involves analyzing various factors such as market potential, competitive landscape, financial feasibility, and strategic fit. According to a study by Johnson et al. (2017), expansion decisions are crucial for companies looking to grow and stay competitive in dynamic business environments.

Investments Refers to the allocation of resources, such as money, time, or effort, into an asset or venture with the expectation of generating a return or profit in the future. It involves committing capital to an endeavor with the goal of earning income or achieving long-term growth (Mukesh & Dinesh 2014).

Investors Individuals who invest money in an activity with the aspirations of increasing their own wealth over course of the investment period. The funds invested come from assets owned, borrowed money, and savings.

Investment decision Refers to the process of selecting and allocating funds to various investment opportunities with the goal of maximizing returns while minimizing risks (Investopedia). It involves analyzing potential investments, evaluating their potential for growth and profitability, and considering factors such as market conditions, financial performance, and risk tolerance. Making informed investment decisions is crucial for individuals and businesses alike in order to achieve their financial goals and objectives.

Investment Culture According to McKenzie (1958), "Culture is a complex and complex system of ties, beliefs, attitudes, and habits that consciously and unconsciously bind a particular community". "The character of investor behavior in

	investors operations will be described using the term "investment culture."
Renewal decision	Refers to the process of evaluating and determining whether to continue or extend a particular agreement, contract, or subscription. It involves assessing various factors, such as performance, cost-effectiveness, market conditions, and stakeholder feedback, to make an informed choice regarding the renewal. According to a study by Smith et al. (2019), renewal decisions play a crucial role in maintaining business relationships and ensuring long-term sustainability.
replacement decision	Refers to the process of determining whether an existing item or component should be replaced with a new one based on various factors such as cost, performance, and condition. It involves evaluating the benefits and drawbacks of replacing the item against repairing or maintaining it. According to a study by Smith et al. (2018), replacement decisions are crucial in asset management as they impact the overall efficiency and effectiveness of an organization's operations.
Research and development	Refers to the process of making strategic choices regarding the allocation of resources and efforts towards innovation, experimentation, and technological advancements within an organization. It involves evaluating potential projects, assessing their feasibility, estimating costs and benefits, and ultimately deciding which initiatives to pursue to enhance competitiveness and drive growth (Smith & Reinert, 2018).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The savings and credit cooperative (SACCO) sector is a significant driver of economic growth. This is due to its ability to bring together low-income savers and borrowers. The goal of this industry is to provide financial services to clients, particularly low-income people (Feather & Meme, 2019). "Cooperatives achieve this through three key activities: accepting shareholder savings, making loans to members to help them improve their standard of living, and giving advice, primarily on how to make investments to make the best use of the credit that has been extended." The proposed project must be advanced with the assistance of loaned funds (Mwakajumilo, 2011). In Kenya, the sector contributes up to 20% of GDP and employs up to 12% of the workforce (Wanyama, 2016). SACCOs are a subcategory of SACCOs that accept deposits and provide bank-like services around the world. Assets are used by DT-SACCOs, like any other financial institution, to obtain larger retrievals, increasing their financial stability and profitability. Deposits made, total assets, and gross loan advancement can all be used to assess the performance of DT-SACCOs. Loans remain the most important asset of SACCOs, as their primary business is the promotion of savings and the advancement of credit to members. Given that loans and credit advances constitute a significant portion of DT-SACCO assets, continuous evaluation of loan quality and performance is critical in determining shareholder financial wellness, safety, and wealth maximization, as well as the overall profitability of DT-SACCOs.

Investment is the process of mobilizing resources to undertake a specific action with the expectation of future returns (Donald, 2010). The action of placing something somewhere else in order to get a return is defined as investment. It entails purchasing an asset or making a deposit to a bank in the goal of receiving a future return or interest from it. (Prasanna, 2008).

Investment decision making is an important part of strategic decision making in every enterprise because investment projects have a significant impact on future economic outcomes and significantly contribute to an enterprise's development. A variety of factors influence the quality of investment decisions, the most significant of which is the selection of investment projects. (Hana, 2010). Investment decisions entail expansion decision, replacement decision, renewal decision and research and development decisions. The expansion decisions entail addition of new products and line of operation, and addition of capacity or diversification of operations (James and John, 2010). Replacement decisions on the other hand focus on improving operating efficiency and cost reduction by replacing obsolete products with new ones in respect to environmental changes (Pandey, 2008). Renewal decisions are aimed at a change in operations in terms of products offered, methods of delivery and efficiency of operations. Finally, research and development decisions are made with the goal of producing new technology or knowledge to improve the effectiveness of products or the efficiency of their manufacturing. Investment decision duties are handled by a corporation's management level since they lie under the scope of financial management (James et al. 2010).

Businesses operate in a competitive market environment in which rivals compete against them, supplier terms differ, customer preferences change, and new technologies emerge, all of which affect the competitive climate. When confronted with such a situation, investment outcomes may differ from what was expected, and this is beginning to manifest up in the economic and financial performance of organizations over time. In this scenario, investment decisions are made from the standpoint of the company, with the goal of adding value through the achievement of a profit and positive cash flows. From the perspective of the shareholders, stock prices must reflect profit and positive cash flows (Damodar, 2010) In Kenya, cooperatives have gone through two critical stages: state control and economic liberalization. During the state-controlled period, government social economic policies were

strengthened, which explains the origins and development of cooperatives. They later got involved in state politics. As a result of this interference, cooperatives were compelled to liberalize their economies in the 1990s under the guise that market principles were critical to their success. Later, new regulations were enacted to support cooperatives that are democratically run and self-governed (Wanyama, 2016). Globally, the cooperative sector is an important component that can aid in the achievement of the SDGs, particularly in developing countries (Wanyama, F. O. 2016). According to statistics, the sector employs 260,164,742 people (Acharya, 2009). Co-operatives are estimated to employ over 250 million people worldwide, have a global turnover of approximately 2.2 trillion US dollars, and provide the infrastructure and services that society requires to thrive. According to a 2017 international statistical report, there were 89,026 Credit Unions (SACCOs) scattered across 117 countries and six continents. The international credit union system has 1.7 trillion dollars in cumulative savings and a foundation of assets totalling 2.115 trillion dollars, of which the loan portfolio accounts for 1.5 trillion dollars.

According to, the average global penetration rate of credit unions was 9.09 percent (World Co-operative Monitor 2017). In 1955, a Catholic bishop from Jirapa, Ghana, proposed the formation of an African SACCO. 2017; Association of Ghana Cooperative Credit Unions, Jirapa villager Rev Father John McNulty (an Irish Canadian) established a SACCO to assist the community in addressing its financial woes collectively rather than individually. He taught about 60 people how to form an alliance after learning about and witnessing the financial success of SACCOs in Canada. This alliance eventually evolved into Africa's first operational SACCO. The success of Jirapa SACCO in Ghana has inspired other African countries (Ghana Co-operative Credit Unions Association, 2017). SACCOs are present in 27 African countries, with a lower prevalence in Ethiopia, Kenya, Tanzania, Uganda, Zambia, Ghana, and other African countries (WOCCU 2017). In Kenya, 429 SACCOs with 175 head offices are licensed

to conduct activity in 2022. (SASRA report 2021). DT-SACCOs are a type of cooperative that accepts both withdrawable and non-withdrawable deposits. DT-SACCOs operate similarly to banks, but are governed by the Sacco Societies Act (SASRA) and regulations enacted in 2010. Several academics have investigated the success of DT SACCOs in Kenya, but none has examined the impact of investment decisions in Nairobi. SASRA has deregistered some DT-SACCOs in Kenya, while others are under statutory control due to poor performance. According to the financial year, over 100 savings and credit co-operatives (Saccos) were unable to meet the statutory capital ratio requirement in 2016, raising concerns about their fitness in the vital credit market. 2017 (business daily of Friday, September 29, 2017).

However, research on the effect of investment decisions on the financial success of Sacco's organizations is pretty sparse. In Kenya, a number of studies have been performed on various aspects of SACCOs, including sustainability, poverty alleviation, resource mobilization for investment, and social economic development and advancement among the poor. The financial performance of credit and savings cooperative societies has been investigated, and a case study of Kiambu has been carried out (Njihia & Muturi, 2016). However, the variables considered were not all-inclusive. Makori, Munene, and Muturi (2013) used a case study of the Gusii region to investigate regulatory compliance issues with deposit-accepting savings and credit cooperatives. The evaluation, according to Chahayo, Bureti, and Juma (2013), investigated financial misalignment in cooperative groups using Kakamega County, Kenya as a case study. Ndirangu (2016) noted that the 14 DT-in Sacco's Kiambu County had adjusted to different products and services as a result of changes in the business environment in a study conducted in Kiambu County. Between 2010 and 2017, according to the Sacco Societies report (2010) to (2017), Kiambu County Sacco's assets grew from 6.9 billion to 26.5 billion, loans from 4.9 billion to 20.6 billion, deposits from 4.7 billion to 16.2 billion, and turnover increased from 1.98 billion to 4.59 billion. Additionally, Nyeri County

has a total deposit of 2.8 billion and an overall combined asset of 4.4 billion, both of which are reported in the SARSA 2017 database.

1.1.1 Investment Decisions

A sizeable percentage of savings in the banking sector is now under the control of Savings and Credit Cooperatives (SACCOs). As a result, the general populace now has assurance from the management of the SACCOs to protect their funds and provide a good return on them. The SACCO's statement of financial condition provides a snapshot of its current financial "health." The SACCO's management must ensure that members will receive their deposits back after making them and must compensate members with interest for using their money for the organization's operations. While member assets serve as the SACCO's primary source of funding, investments are how the money is used. Loans make up a significant portion of the investments, along with other financial, liquid, non-financial, and other investments in regulated financial organizations. It is the choice made by a business to allocate its present resources most profitably toward long-term investments in the hope of receiving a steady stream of benefits over a number of years. It involves the sale of a business unit or division, adjustments to how sales are divided, an advertising campaign, a research and development initiative, staff training, and stock purchases, in addition to long-term asset replacement, modernization, and growth (tangible and intangible). These investment choices are crucial for a company because they affect risks, development, and profitability.

The importance of investment decisions for businesses has been demonstrated by Drury (2004). Businesses can use these decisions to choose which projects to accept and can also estimate the entire amount of capital expenditures that the business should incur. The organization's profitability and long-term strategy are impacted by investment. Because failing to make wise decisions could cause the company to suffer financially in the long run, management is required to analyse their initiatives properly. The Q theory of investment states

that a company should engage in an investment with the expectation that it will produce gains and other benefits, and that an effective asset market will take these prospects into account when valuing the business. (Erickson & Whited, 2000). Therefore, the sole element influencing firm investment is the availability of profitable investment opportunities. (Balfoussia & Gibson, 2016). Moreover, according to Markowitz's portfolio theory from 1952, investors balance an investment's risk and anticipated returns when making a decision.

Businesses today compete in a globally competitive market environment where rivals battle against them, suppliers' terms can change, customers can have changing tastes, and new technologies arise. The way the fight is fought is impacted by all of these things. When faced with this situation, investment outcomes could be different from what investors had anticipated, and this is starting to manifest itself in the long-term economic and financial success of companies. With the aim of creating value by securing a profit and positive cash flows, investment decisions are made in this context and from the perspective of the company. From the perspective of the shareholders, the stock prices must reflect profit and healthy cash flows (Damodaran, 2010). Due to their tendency to affect long-term growth while changing the risks associated with the firms, these investment decisions, therefore necessitate extraordinary concentration. They also require a large financial outlay. It's also critical to understand that once judgments are made, they cannot be undone, and if they are, the institutions suffer large costs that hurt their financial performance. Every financial institution must include investment decisions in its strategic decision-making process since they affect the enterprise's future financial performance. (2015) According to Wasike DT-Financial, the SACCOS' performance improved as a result of their investment decisions.

1.1.2 Profitability

Profitability is the extent to which an activity has been achieved by maintaining quality and surplus yield. It also considers how effectively the company has used its limited resources to

generate profits (Kiaritha, 2015). It has been demonstrated that business investment decisions immediately impact a company's profitability. The q theory of investments asserts that a firm's investment behavior effects its profitability by directly linking investments to the firm's goals. (Twine, Kiiza, & Bashaasha, 2015). This profitability metric demonstrates whether a company has used its assets efficiently to generate revenue and improve its financial health (Hadi, 2019). Profitability can be determined using performance metrics such as sales margins, return on assets, and return on net worth, among others (Brigham and Houston, 2008). Indicators such as ROI, ROE, and asset turnover, among other things have been used as proxies for a company's profitability when compared to levels of corporate governance, ownership concentration, or even to predict future share prices.

The return on assets (ROI) metric, which is well-known in the accounting literature, is one of the most often used profitability indicators. It evaluates the operational return that a company's assets give. It serves as a critical benchmark for comparison with third-party capital cost estimates and displays the return on investment for the entire organization (Weygandt et al., 2009). Indicators that use market values to gauge a company's profitability are available in addition to those for profitability determined by accounting measurements. The financial literature recommends Tobin's Q coefficient as a standard that can be used to gauge a company's success (Wenderfelt and Montgomery, 1988; Bharadwaj et al., 1999). SACCOs face fierce competition from a variety of financial institutions, including banks, insurance, pension plans, capital markets, microfinance organizations, Development Finance Institutions, and unregulated financial services like Rotating Savings and Credit Associations due to their location (ROCA). As a result, the County’s SACCOs' ability to survive depends on their ability to make smart investments and innovate in order to obtain a competitive advantage. Since 2016, the financial performance of DT-SACCOs has been unpredictable and changeable over time. According to DT-SACCO key performance measures, overall assets climbed by 12.4% in

2017, rising to Kshs 443 billion from Kshs 393 billion in 2016. The loan portfolio increased by 11.3% from Ksh 297.6 billion in 2016 to Ksh 331 billion in 2017. Total deposits increased 12.01% from Kshs 272.58 billion in 2016 to Kshs 305.3 billion in 2017.

According to the comprehensive analysis, asset, deposit, and loan growth rates in 2017 were 12.4%, 12%, and 11.3%, respectively, compared to reported growth rates of 14.8%, 14.8%, and 15.3% in 2016. The blunder in loan provisioning signals a risky credit portfolio. It is expensed in the income statement and has continued on a negative trend of 6 up to Kshs 10.7 billion, a 23.4% increase from Kshs 8.6 billion in 2016. (Financial sector stability report, 2017). This study examines the performance of DT SACCOs from 2018 to 2021 in order to narrow the performance trend and the impact of investment decisions on performance. Total assets, total deposits, gross loan advanced, and total earnings will be used to evaluate the financial performance of DT-SACCOs. SACCO performance can be influenced by investing decisions, according to empirical studies.

1.1.3 Investment Decision and Profitability

One of the primary and important decisions for management of any company is the choice of investments. They are important choices for a business because it is thought that they will affect revenue and risk, which in turn will affect how efficient the business (Alslehat & Altahtamouni, 2014). According to the accelerator model of investment, firms retain a stock of investments that is proportional to the firm's amount of output in order to maximize profits. (Scholleova, Fotr & Svecova, 2010). Research and development, modernization, expansion, and replacement of the long-term asset are major factors in investment decisions. The financial choices a company makes are crucial to the efficiency of the company and its effectiveness. Decisions regarding investments are essential for organizational management for a company to be competitive and profitable. (Virlics, 2013). According to Loof and Heshmati (2008), investment decisions have a positive and substantial impact on a company's efficiency.

The effective use of capital funds is critical in making investment decisions. Businesses consider profitability as well as available internal funds when making investments. As a result, there is a nexus between investment and profitability. In general, a firm needs an objective, a method of evaluating or measuring potential investment and financing options, and a criterion for accepting or rejecting them in order to make sound financial decisions. Because the organization must develop a rational process to decide what to invest in, the cost of capital is a critical factor in making the best investment decisions. Positive net cash flows generated by successful investment decisions can be used to pay interest. The amount of future cash flows generated because of profitable trading is thus determined by the investment selection. Hao et al. (2011) attempted to explain such relationships by examining the effects of investments on profitability in periods following the periods during which the investments were made in order to evaluate the effects of investments on business profitability. Because the firm's value is determined by investment decisions, the study's goal must be to generate positive returns and increase the firm's value. Given the foregoing, the primary goal of this research is to look into the relationship between investment and profitability of licensed DT SACCOS in Nairobi County.

Kalliokoski (2020) sought out to find out can financial ratio analysis be utilized in the airline industry, do the rule of thumbs relate in the airline industry, and which organization, Finnair or SAS, has stronger financial positions founded on liquidity, profitability and activity ratios over the studied period of 2008-2018. After applying comparative financial ratio analysis, the investigation uncovers that Finnair has greater financial health in terms of liquidity, profitability, and activity. The incorporation of financial ratio analysis when analyzing airline businesses was also discovered to be achievable, despite the reality that the current ratio standards are irrelevant. Kiiru, Kirori, and Omurwa (2019) examined the financial management and success of listed companies in the business and services sectors using Kenya

Airways as a case study. Both descriptive and inferential statistics were used in the analysis of the data. Findings showed that Kenya Airways' spending decision had a favorable but statistically insignificant financial success.

The study will look at how different investment decisions (replacement, renewal, research development and expansion) decisions affect the performance of DT SACCOs. The expansion considerations include introducing new goods, lines of business, and capacity, as well as diversifying activities (James & John, 2010). Replacement selections, on the contrary, are geared toward increasing functional efficiency and lowering costs by replacing obsolete items with repurposed ones (Pandey, 2008). Procedure renewal decisions are intended to enhance the items provided, the delivery strategy, and the process's effectiveness. According to a FSD (2013) survey, SACCOs are experiencing severe liquidity issues, with the majority of them unable to meet their customers' requests for loans and withdrawal of deposits. Clients, despite their loyalty, are concerned about the fate of the DT-SACCOs in light of this worry. If this stance is not corrected, we may see the end of SACCOs, which would be a terrible failure for Kenyans. Firm profitability considers how effectively the company has used its limited resources to generate profits (Kiaritha, 2015). This metric reveals if a company has used its assets efficiently to generate income and improve its financial health (Hadi, 2019). Kenya's capital city is located in Nairobi County. The County has the most SACCOs, which control 47 head offices and receive their membership from the service sector, the county's most significant industry.

1.2 Statement of the Problem

Ideally, the investment decision is regarded as one of the stakeholders' primary concerns. This is due to the fact that investment decisions affect the financial performance of organizations (Smith, J. 2022). In order to increase their profitability and withstand fierce competition as worldwide competition rises, SACCOs are concentrating their efforts on investments (Irungu

& Gatuhi, 2013). However, since investing decisions are subjective, choosing the wrong one might even push a business into bankruptcy. Additionally, market conditions, portfolio level divergence, the results of fundamental and technical analysis, as well as what investors and managers want and prefer can all be taken into consideration when making investment decisions (Rakocevic, Milosevic & Rakocevic, 2014). Making investment decisions is risky thus making it is difficult to forecast whether costs will be recovered and profits will be produced in the desired amount of time (Virlics, 2013). SACCOs are vital to Kenya's economic development because they encourage members to save money and provide low-interest loans to help them improve their standard of living. Performance of has been poor over the previous years. The SACCOs compete with other institutions in Kenya, particularly commercial banks, on a daily basis (Mugo, Muathe & Waithaka, 2019) which offer relative the same business types under closely terms. Banks have gone so far as to offer both clients and non-clients unsecured loans; this non-price competitive tool has hampered SACCO performance. These institutions have chosen to diversify their investments in order to maintain financial stability (Munene, Ndambiri, & Wanjohi, 2019). However, it is unclear which of these investment decisions produces the desired profits for SACCOs, which is why the study was conducted.

The majority of research on investment decisions and organizational profitability focuses on large businesses and industrialized nations. According to the OECD (2003; Melville et al., 2004), their findings have a positive impact, whereas others dismiss them as insignificant or even suggest a negative impact. Low performance in a firm's core business poses a significant challenge to the firm's overall operations. Due to the SACCOs' underwhelming adoption, SACCOS that accept deposits emerged to expand their operational horizons and look for alternative revenue-generating strategies. This warranted a thorough investigation due to the performance of these licensed SACCOs. This makes it essential to carry out this research in authorized SACCOs in Nairobi County. The goal of this study is to see if investment

decisions affect the profitability of licensed SACCOs in Nairobi County. Studies on how investment decisions affect the profitability of DT SACCOs, however, are surprisingly few. According to Onchangwa *et al*. (2013), the majority of SACCOs in Kenya lack appropriate investment procedures for SACCO member investments, resulting in lower member uptake. Maiyo (2013) conducted a study to evaluate the impact of investment decisions on the profitability of companies listed on the Nairobi Securities Exchange in order to determine the nature and strength of the relationship between investment decisions and the profitability of companies listed on the NSE. Karanja (2012) conducted research in Limuru, Kenya, to assess the link between investment decisions and the financial success of small- and medium-sized businesses. Ogaro, Songoro, and Euna (2017) conducted a study with the intention of determining how investment decision-making strategies affected the financial performance of ME in Kenya. The study by Setiyorini and Kartika (2018) seeks to understand how profitability and investment decisions impact the value of a firm.

This research focuses on studying how investment choices affect the profitability of licensed Savings and Credit Cooperatives (SACCOs) in Nairobi County, Kenya. In this region, SACCOs play a vital role in economic development, facing fierce competition from commercial banks and the need to diversify their investments for financial stability. The study explores how investment decisions impact SACCO profitability, a topic typically studied in the context of larger businesses in industrialized nations. This research narrows its focus to licensed SACCOs in Nairobi County, examining various factors like market conditions, diversification, analysis methods, and individual preferences to understand their influence on profitability. The study's motivation stems from the desire to identify profitable investment decisions for SACCOs amidst tough competition with commercial banks and the underutilization of SACCOs for member investments. Previous research has revealed gaps in this area, making further investigation essential. In summary, this research aims to improve our

understanding of how investment decisions relate to SACCO profitability in Nairobi County, Kenya, within the context of competitive financial institutions. It seeks to fill gaps in existing literature and provide insights for both practitioners and scholars.

1.3 The Study Objective

1.3.1 General Objective

The overall goal of this research was to evaluate the effect of investment decision on profitability of savings and credit cooperatives in Nairobi County, Kenya.

1.3.2 Specific Objectives

i. To evaluate the effect of the expansion decision on the profitability of SACCOs in Nairobi County.
ii. To assess the effect of replacement decisions on profitability of SACCOs in Nairobi County.
iii. To evaluate the effect of renewal decision on the profitability of SACCOs in Nairobi County.
iv. To assess the effect of research and development decision on the profitability of SACCOs in Nairobi County.

1.3.3 Research Hypotheses

$H_0$1: The expansion decision has no significant effect on the profitability of SACCOs in Nairobi County.

$H_0$2: The replacement decision has no significant effect on profitability of SACCOs in Nairobi County.

$H_0$3: The renewal decision has no significant effect on the profitability of SACCOs in Nairobi County.

$H_0$4: The research and development decision has no significant effect on the profitability of SACCOs in Nairobi County.

1.4 Significance of the Study

The study's results and suggestions are expected to help numerous groups of people, as illustrated in the sub-sections below.

1.4.1 Government

This research will help the nation streamline its operating processes so that it can profit from the business while also advancing the overall sector, which will contribute to the realization of Vision 2030. By enabling SASRA to evaluate the effectiveness of its regulatory standards, it is also anticipated to support the federal government in fulfilling its regulatory responsibilities.

1.4.2 Top managers and policy holder

The study will support the development of overall investment policies and enable the company's senior managers and decision-makers choose the best degree of investment choice. It explains the link between financial performance of a company and investment decisions.

1.4.3 SACCOs Shareholders

The review will also benefit SACCO owners by ensuring that their investment portfolio is optimized. This was done to improve living conditions, the economy as a whole, and to entice more people to join SACCOs because, as previously stated, the average growth of membership has been steadily decreasing (SASRA, 2010 to 2013).

1.4.4 SACCO Board Members

The researcher's goal will be to assist SACCO board members in their efforts to enhance SACCO’s performance and minimize agency problems. Additionally, each SACCO will benefit from improved operations to combat competition from banks and other players in the financial sector, such as microfinance institutions (MFIs).

1.4.5 Scholars

The study is also expected to be of greater assistance to researchers because it adds knowledge to what has already been investigated and aids in filling unresolved gaps.

1.5 Scope of the Study

The study's purpose was to investigate how investment decisions influenced SACCO profitability in Nairobi. The independent variables were expansion, replacement, renewal, and research and development decisions. The study, conducted among SACCOs in Nairobi County, collected data from yearly reports and accounts for the population of DT SACCOs licensed as of December 31, 2021. The research period was from 2018 to 2021.

CHAPTER TWO

LITERATURE

2.1 Introduction

This chapter explains the study's theoretical and empirical foundations. This chapter also includes the conceptual framework and variable operationalization.

2.2 Theoretical Review

The key theories in the study will be the Accelerator Model of Investment, Transaction Cost Theory, Modern Portfolio Theory, and the Q Theory of Investment.

2.2.1 The Accelerator Model of Investment

Thomas Nixon Carver, Albert Aftalion, and other individuals created the accelerator theory. It was considered to be novel economic policy at the time. The accelerator concept was further developed as a result of Keynesian economics. The accelerator is a straightforward model that incorporates Keynes' observation that investment return is caused by the impact of recent production on investor expectations. This notion is based on the idea that investment has a beneficial impact on expected production work levels. Thus, if demand rises, investment responsibility will expand; this means that demand conditions might influence investment decisions. However, the development of the Keynesian theory in the 20th century contributed to the acceptance of this concept in the field of economics. The accelerator theory in economics emphasizes the connection between the rise in investments, income, and demand. It asserts that investments in a company rise whenever there is a rise in demand for the company's goods or services or if revenue rises for any cause (such as from increased sales or higher prices). Usually, this idea is applied to create new economic policies. The accelerator theory, for instance, might be used to decide if introducing new machinery would be preferable to increasing income for firms, which could utilize the extra capital for expansion and growth, or increasing income for consumers, who would then demand more merchandise.

According to the accelerator idea, when demand rises, businesses may increase production to boost profits or raise prices to keep up with demand while generating more money. The acceleration idea has come in for a lot of criticism lately. The fact that an increase in output or revenue does not always entail an increase in investment that is multiples of that amount means that we cannot assume that the accelerator's value remains constant throughout the trade cycle, contends Kaldor. This is because, before buying any new equipment, we'll try to use any existing machinery that is now sitting idle. Furthermore, if business owners believe that the rise in demand brought on by an increase in income or output will only last a short while, they would try to meet the demand by overworking the machinery already installed rather than creating a new facility. Since there isn't any excess capacity in the industries producing consumer products, it has been assumed that the accelerator theory is correct. The acceleration principle also assumes that the capital goods industry has extra productive capacity. If there is no spare capacity in the industries that produce machines, increased demand for machines brought on by the need for more production would not lead to an increase in machine supply. In the short run, investment cannot increase without a machine supply. The accelerator theory therefore assumes that the manufacturing of machines is capable of increasing its output, albeit only briefly. The supply can be increased by working more shifts, reducing finished machine stocks, and using other strategies.

However, stockpiles cannot be decreased to zero, and it is determined to be expensive to work double shifts or to undertake various experiments. Entrepreneurs won't think it worthwhile to boost investment in industries that make machines until demand has steadily climbed. Over time, there is a change in the accelerator's size. The businessmen's assessment of the profitability of building additional manufacturing facilities to produce more machines based on their expected working lives would influence its value. Although the demand for machines has increased unexpectedly, it is expected to stay stable in the future. The right kind

and quantity of resources are required for investment activities, which boost financial performance. (Machuki &Aosa, 2011). By achieving long-term financial success, the company is able to produce above-average returns. This then draws attention to how businesses create and sustain competitive advantages. According to the accelerator model of investment, having access to a few key resources with characteristics such as value, barriers to duplication, and relevance will provide the answer to this question. The firm can achieve effective financial performance if it makes wise use of these resources in its operations. The accelerator investment model gives the firm's management the crucial task of identifying, developing, and deploying key resources to investments in order to maximize return in order to emphasize strategic choice. In order to maintain their competitive edge and keep up with their competitors, businesses must update their strategies in light of the ongoing changes in the business environment. The research found that opinions on modernization or renewal are primarily focused on "re-energizing" organizational capabilities with regard to asset functions, employee performance, and goal achievement.

This theory demonstrates a balanced relationship between an investment decision and product performance because the most basic plain accelerator model predicts that an investment decision will be inversely related to the rise in output in the next period (Parker, 2009). As a result, the Accelerator Model of Investment is a theory that explains how businesses make investment decisions based on changes in their sales or demand. It suggests that firms increase their investment in capital goods, such as machinery or equipment, when there is an increase in demand for their products or services. This model is closely related to the renewal decision as it highlights the importance of assessing market conditions and future growth potential before making investment decisions. By considering the potential for increased sales and demand, businesses can better evaluate whether it is economically viable to invest in additional capital goods. This analysis helps them evaluate the potential return on

investment and weigh it against the costs of acquiring new capital goods. Additionally, analyzing market conditions and growth potential allows businesses to anticipate future demand and make strategic investment decisions that align with their long-term goals. By carefully evaluating these factors, businesses can optimize their investment decisions and position themselves for success in a competitive market.

The Accelerator Model of Investment serves as a well-established and valuable framework when it comes to analysing the impact of investment decisions on the profitability of Savings and Credit Cooperatives (SACCOs) within Nairobi County, Kenya. This model provides essential insights into the intricate relationship between investment choices and the financial performance of these cooperatives. Within the context of SACCOs in Nairobi County, the model allows for an in-depth exploration of numerous influential factors. It considers the prevailing economic conditions, the dynamics of interest rates, and the ever-changing member demand for financial services. By thoroughly examining how these elements shape investment in SACCOs, the Accelerator Model equips policymakers and stakeholders with the necessary knowledge to make well-informed decisions aimed at enhancing the sustainability and growth of these financial cooperatives. One of the model's key strengths lies in its ability to identify precise opportunities for optimizing investments. It can shed light on strategies such as portfolio diversification, enabling SACCOs to spread their investments across various assets or sectors for enhanced financial stability and growth. Additionally, the model can pinpoint specific member segments that hold untapped potential for investments, allowing SACCOs to tailor their financial services to better meet the needs of different member groups. Moreover, the Accelerator Model offers a proactive approach by assisting in the identification of potential risks associated with investment decisions. By recognizing these risks in advance, SACCOs can take necessary measures to mitigate them effectively. This proactive stance ensures the long-term success of SACCOs in Nairobi County, safeguarding their financial health and

ability to serve the community effectively. In summary, the Accelerator Model of Investment is an invaluable tool for comprehending how investment decisions affect the profitability of SACCOs in Nairobi County, Kenya. It empowers decision-makers with the insights needed to optimize investments, manage risks, and secure the enduring success of these vital financial institutions.

2.2.2 Transaction Cost Theory

Coase (1937) developed this concept. He claims that there are transaction costs involved with delivering products or services externally rather than internally. Ronald Coase is widely regarded as the father of transaction cost theory (Benkler 2006; Williamson 1985). Coase sought to understand "why a firm emerges at all in a specialized exchange economy" (Coase 1937). At the time, economists acknowledged that firms represented an alternative mode of economic organization but lacked a fully formed theory to explain why they existed. After rejecting a number of current economic explanations, Coase stated, "The major reason why it appears to be profitable to start a corporation would seem to be that there is a cost of employing the price mechanism" (such as technological inseparability). In essence, Coase's main assumption was that transactions conducted within a corporation may result in lower costs than market transactions. As a result, his understanding of transaction costs is, by definition, comparative. As noted 50 years later by coase, a comparison of the costs of conducting market transactions with the costs of conducting them within an organization, the firm, would determine whether a transaction would be organized within the firm or carried out on the market by independent contractors (Coase).

The concept that markets and enterprises have different costs lay the groundwork for transaction cost theory. Coase asserts that "The most evident cost is that of knowing what the relevant prices are" based on the widely accepted economic presumption that price is a type of information. The costs of writing and finalizing a different contract for each exchange

transaction, he continues, "must also be taken into account." In several of his later papers, Coase goes into more depth concerning the nature of transaction costs. For instance, Coase (1960) provides other instances of transaction costs, such as the expenses of finding trading partners and conducting inspections, in his other lauded work, the "Problem of Social Cost." In his acceptance speech for the Nobel Prize, he further elaborates on this idea of transaction costs: "I came to recognize that there were expenses associated with employing the price system. Without taking into account transaction costs, Coase made it abundantly evident, it is challenging to fully understand how an economic strategy operates and have a strong basis for creating economic policy. Transaction cost theory holds that firms aim to expand in a cost-effective way in order to keep their profitability.

A fundamental barrier to transactional efficiency is the inability to predict the firm's future environment. According to Inge et al. (2006), uncertainty raises the transaction costs for the firm, particularly for research, information processing, and adaptability. Despite past studies assuming a favourable relationship between inventive activity and company performance (Zhao & Li, 1997), firms with higher R&D expenditure are expected to outperform those without. In transaction cost theory, this assertion line is docked (Williamson, 1975; 1994). In order to keep their profitability, firms strive to expand in an economical manner. Future business environment uncertainty is a big impediment to efficiency. Uncertainty causes the company's transaction costs to increase, especially in research, information processing, and adaptability (2006) "Inge et al." Thus, the theory served as the foundation for the fourth objective of research and development because technical innovation and market expansion are vulnerable to the opportunistic behaviour of the participants involved, high-tech corporations will infuse in-house R&D rather than outsource R&D under these circumstances and reasonably realistic behaviour assumptions of constrained rationality.

In general, R&D employs a high level of uncertainty regarding nature and the timing of research results (Mc Cutchen *et al*., 2004). (Arrow, 1962).

Taggart and Blaxter (1992) investigate the uncertainty of R&D as characterized by two sets of actors in technology and the market. Technological uncertainty means that R&D does not provide a large amount of output, market uncertainty frequently means that demand changes, and competition means that R&D investment cannot be recouped. As a result, R&D activity frequently necessitates transaction-specific investments in assets that cannot be simply redeployed (Choi & Williams, 2013). In conclusion, transaction cost theory is a framework that examines the costs associated with conducting economic transactions, such as searching for information, negotiating contracts, and enforcing agreements. When it comes to research and development (R&D), transaction cost theory suggests that organizations may choose to engage in R&D activities internally rather than outsourcing them to external parties. This is because the complexity and uncertainty involved in R&D can lead to higher transaction costs, making internalization a more efficient option for firms seeking to minimize these costs. Moreover, it suggests that firms engage in research and development (R&D) activities to reduce transaction costs. Additionally, R&D efforts can lead to innovations that enhance a firm's competitive.

The application of Transaction Cost Theory provides a valuable framework for comprehending how transaction costs exert a substantial influence on the investment decisions and overall profitability of Savings and Credit Cooperatives (SACCOs) within Nairobi County, Kenya. This theory underscores the pivotal role that transaction costs, encompassing elements like information asymmetry, monitoring expenses, and contracting costs, play in shaping the efficiency and financial success of SACCOs. Information asymmetry, a key component within this theory, pertains to the unequal distribution of information between parties involved in transactions. In the context of SACCOs in Nairobi County, this could mean disparities in knowledge between SACCO management and members or even among members themselves.

Such information imbalances can impact the quality of investment decisions and consequently the profitability of the SACCOs. Monitoring costs, another facet of transaction costs, encompass the resources required to oversee and ensure compliance within the cooperative's operations. These costs are particularly relevant in SACCOs, where close monitoring is essential to safeguard members' interests and financial resources. The effectiveness of this monitoring directly affects investment decisions and profitability. Contracting costs refer to the expenses associated with creating and enforcing agreements within the SACCO, which are integral to investment decisions. A clear and robust contractual framework is essential for SACCOs to operate smoothly, maintain the trust of their members, and make sound investment choices that contribute to profitability. By dissecting and analysing these transaction costs, policymakers and stakeholders gain a nuanced understanding of the challenges SACCOs face in Nairobi County. With this insight, they can develop strategies to reduce and manage these costs effectively, thereby enhancing the overall performance of SACCOs. These strategies may involve improving information-sharing mechanisms, streamlining monitoring processes, and refining contract structures. In summary, Transaction Cost Theory offers a robust lens through which to assess how transaction costs impact investment decisions and profitability in SACCOs in Nairobi County, Kenya. It emphasizes the importance of addressing information asymmetry, monitoring costs, and contracting costs to bolster the efficiency and financial well-being of these vital financial institutions.

2.2.3 Modern Portfolio Theory

An American economist named Markowitz (1952) developed a theory of "portfolio choice" that enables investors to assess risk in relation to anticipated return. Modern Portfolio Theory (MPT) was named after Markowitz's concept. The MPT is an investment theory that seeks to optimize portfolio expected return for a given amount of portfolio risk, or to minimize risk for a given level of expected return, by carefully balancing asset allocation (Saleh) (2012). This

contends that a trader selects a portfolio to maximize returns for a specific risk after determining a specific collection of assets and the risk associated with them. The expected return standard deviation quantifies financial risk. (Markowitz, 1991). The level of danger that each investor is willing to take affects the assets that they choose to invest in (Cardozo, 1985). How much risk an investor is prepared to take is determined by the return. One method to diversify the risks is to choose a variety of assets within the efficient frontier with various risks. The value of the portfolio is calculated by adding the contributions received from each commodity. His contributions to contemporary portfolio theory eventually earned him the economics Nobel Prize. Investments should be chosen to maximize total returns while minimizing risk and modern portfolio theory (MPT) is a helpful tool for doing this.

Although the MPT is widely used in finance, its fundamental assumptions have lately been brought into question. Modern Portfolio Theory, an advancement over traditional investment models, signifies a significant leap forward in financial mathematical modelling. The theory supports asset diversification to protect against both market and business-specific risk. (Ambrose and Vincent, 2014). The theory (MPT) is an advanced investment decision strategy that assists an investor in classifying, estimating, and controlling the type and amount of anticipated risk and return. His Modern Portfolio Theory (MPT), which is the intellectual antithesis of traditional stock picking, is now a popular financial strategy. When this portfolio management tool is used correctly, it is possible to build a broad and successful investment portfolio. This mathematical model maximizes the anticipated return for the given level of risk when used to build an investment portfolio.

The MPT theory places a strong emphasis on diversification as a vital element. Most investments either give high returns at high risk or poor returns at low risk, depending on the level of risk. Investors can get the best outcomes, according to Markowitz, by balancing the two and taking into consideration their unique risk tolerance. Investors looking to create

diversified portfolios can benefit from using the MPT. Investors can build more efficient portfolios, claims contemporary portfolio theory. The MPT has received perhaps the harshest criticism for rating portfolios based more on variance than downside risk. In other words, current portfolio theory says that two portfolios with the same level of returns and variety are equally desirable. Frequently occurring minor losses in one portfolio may be the reason of such variance. Another person might differ from the norm as a result of uncommon but impressive declines. The majority of investors would prefer regular, minor losses because they would be more manageable. A portfolio can be diversified using the contemporary portfolio theory to obtain a greater overall return with less risk. Reduced volatility is another advantage of diversity and contemporary portfolio theory. The current portfolio theory is a useful tool for investors since it enables them to select various investment kinds for the goal of investment diversification and then create one portfolio by taking into account all of the investments.

Modern portfolio theory states that all of the selected investments are combined in a way that, through diversification, reduces market risk while also giving investors a respectable long-term return. Since it encourages traders to diversify their portfolios rather than relying entirely on one investment to preserve their financial stability and maximize returns with the least amount of risk, the idea is an essential instrument for preventing financial catastrophe. At its core, modern portfolio theory makes two main claims: first, that an investor can create a diversified portfolio of different assets or investments that will maximize returns while limiting risk by realizing that the portfolio's overall risk and return profile is more significant than the risk and return profile of any particular investment. Understanding the risk-return relationship, the importance of diversification in building an investment portfolio, and the concept. By carefully choosing the proportions of varied assets, the MPT seeks to optimize the portfolio's expected return for a given degree of portfolio risk or, alternatively, to reduce risk for a given

level of projected return (Saleh) (2012). Although the MPT is frequently employed in the financial industry, its underlying presumptions have come under heavy scrutiny recently.

A significant improvement over conventional investment models is the Modern Portfolio Theory, which is a step forward in the mathematical modelling of finance. The approach encourages asset diversification to protect against market risk and risk specific to a single organization (Ambrose & Vincent, 2014). The theory (MPT) is a sophisticated financial decision-making technique that requires an investor to categorize, quantify, and control the type and amount of anticipated risk and return. Wallen Buffet, who claims that exceptional returns may be the result of managerial skills rather than investment skills, or a combination of the two, disputes this hypothesis. (Rani, 2012). This theory will make it clear how to select assets to lower investment risk, enabling financial institutions to operate as wanted. The MPT theory promotes asset diversification when making a specific portfolio purchase to lessen market risk and losses as well as risks associated with a specific business. (Ambrose & Vincent, 2014). A sophisticated technique for choosing investments, the MPT theory showed investors how to manage their portfolios. The quantification of the relationship between risk and yield and the notion that investors must be rewarded for taking on risk form the basis of portfolio theory. Portfolio theory differs from conventional security analysis by focusing more on determining the statistical relationships of the complete portfolio than just scrutinizing the features of individual investments. (Amalendu et al, 2011).

The MPT mathematically expresses the concept of investment diversification as selecting a collection of investment assets that has a lower overall risk than any single asset. Given how frequently various asset categories experience opposite changes in value, this likelihood is easily understandable. But even when asset yields are positively correlated indeed, even when they are, diversification lowers risk. The MPT theory is pertinent to this research because it encourages investment diversification, which is comparable to the expansion

decision study variable. In conclusion, modern portfolio theory is a framework that helps investors make decisions about the allocation of their assets in order to maximize returns while minimizing risk. When it comes to expansion decisions, modern portfolio theory can be applied by considering the potential impact of the new investment on the overall portfolio. By analysing the correlation between the expansion decision and existing investments, investors can assess whether the expansion will help diversify their portfolio and potentially enhance its risk-return profile. Additionally, modern portfolio theory emphasizes the importance of considering the investor's risk tolerance and investment objectives. This means that before making an expansion decision, investors should evaluate their willingness and ability to take on additional risk. By aligning the expansion decision with their risk tolerance and investment objectives, investors can make informed choices that are in line with their overall financial goals

2.2.4 Q theory of investment

Tobin developed this theory in 1969 and states that investments should be made only if the average Q is higher than one. (Eklund, 2013). Grunfeld (1960) advocated utilizing the firm's market value as a proxy for anticipated investment performance, noting that investment is inextricably linked to the firm's market value. According to Tobin's Q theory from 1968, the firm's market value has an impact on this investing technique. Average Q describes the link between market value and replacement cost. At the equilibrium point, Q is predicted to be zero, proving that the capital expenses of establishment and repair are equal. When the market worth is greater than the company's listed assets, Q rises. This promotes investment and causes companies to issue shares by demonstrating that the assets are worth more than the purchase price. This viewpoint holds that capital investment has a direct impact on portfolio decisions. This idea is related to the investment rate as a function of Q. Q also represents the market value of additional new investments divided by their replacement cost (Tobin, 1969).

The cost of replacing an existing asset based on its current market worth is referred to as replacement value (or replacement cost). According to Tobin, whether q is more or less than one determines whether the firms will make an investment. The stock market may place a larger value on a company's installed capital than its replacement cost if the q-ratio is greater than one. This encourages the businesses to increase their installed capital stock. That is, the business will increase its investment. If a company's q-ratio is less than one, the stock market values its capital asset stock less than their replacement cost. This reduces the likelihood of a company's management replacing worn-out capital assets. Tobin contends that a firm's q-ratio, which indicates whether it's worth is greater than or less than one, determines the amount of investment made. Tobin's initial (1977) study included data from 1960 to 1974, a time span during which Q appeared to sufficiently clarify investment. When compared to various periods, the Q cannot forecast whether a stock has been overstated or underrated. Despite increased asset investment, the Q dropped over the late 1970s' depressing stock markets, whereas the Q and investment looked to move in tandem throughout the first half of the 1970s.

It has been established that the neoclassical theory of investment and Tobin's g-theory are closely related. Notably, Tobin's q depends on both the present and the future economic profits generated by installed capital. The firm will be making profits on its installed capital if the marginal product of capital (MPk) is higher than the cost of capital, in accordance with neoclassical theory of investment. These gains will persuade others to acquire company stock. As a result, the market value of the firm's installed capital stock will increase. This indicates that the firm's q-ratio has increased in value, which will encourage it to make or purchase additional capital assets as investments. As a measure of inducement to invest, the Tobin's q-ratio has the advantage of reflecting both the firm's capital assets' current and future profitability. For example, if the government lowers the corporate income tax in its annual budget beginning the following year, businesses may expect higher predicted earnings after

taxes. These higher anticipated profits will increase the firm's existing capital's worth and encourage it to install more capital, or make additional investments. Tobin's Q-Theory of Investment emphasizes that investment decisions depend not just on present policies but also on policies anticipated to be in effect in the near future, according to Mankiw.

Avinash Kamalakar Dixit's work suggests that businesses may postpone contraction or expansion for a while, but only if q continues to be significantly below or above unity (one). According to Kaldor's V, changes in consumption and investment will be reflected in stock price swings. However, actual data show that Tobin's findings are not as precise as one might expect. This is primarily due to businesses analyzing the current value of expected profits and potential interest rates rather than basing their decisions on historical data. The concept served as the basis for the second replacement goal. If investors price assets at prices that are higher than their replacement costs, there are strong incentives to invest in reproducible real capital (Ciccolo, Fromm, & Marshall, 1979). This theory contrasted sharply with output-oriented models such as the acceleration model in that it attempted to justify investment on a financial basis in terms of portfolio balance; this refers back to the q ratio notion, which is the ratio of the market value of capital to its replacement cost.

In conclusion, the Q theory of investment can be connected to replacement choices in that it takes into account the relationship between a firm's market worth and the cost of replacing its assets. The Q hypothesis states that when an asset's market value surpasses its replacement cost, businesses would either invest in new ones or replace old ones. According to this idea, businesses decide whether to invest in new assets or simply replace their existing ones depending on the potential profitability and growth opportunities these investments may present. The Q theory also considers investor sentiment and market conditions, as these variables can affect the market value of a firm's assets. This means that even if the replacement cost of an asset is low, a firm may still choose to invest in new assets if the market value is

high due to favourable market conditions and positive investor sentiment. Ultimately, the Q theory provides a more comprehensive framework for understanding investment decisions and asset replacement strategies as a high Q ratio may indicate optimism and confidence in future returns, while a low Q ratio may suggest caution and uncertainty.

The Q theory of investment, a widely accepted economic theory, illuminates the connection between investment decisions and profitability. It asserts that firms base investment choices on the anticipated future profitability of their projects. Within the setting of Savings and Credit Cooperatives (SACCOs) in Nairobi County, Kenya, delving into how the Q theory of investment shapes their decision-making process offers valuable insights into their financial success. This study seeks to evaluate the influence of the Q theory of investment on the decision-making process of SACCOs in Nairobi County, Kenya by examining key factors such as capital expenditure, market conditions, and expected returns. These factors are pivotal in assessing the practical implications of this theory on SACCO operations. Furthermore, this research aims to uncover potential challenges and limitations that may surface when implementing the Q theory in this specific context. Identifying these dynamics provides essential insights that can inform strategies for enhancing the profitability and long-term sustainability of SACCOs. In summary, the Q theory of investment is a valuable lens through which to understand how investment decisions affect profitability in SACCOs in Nairobi County, Kenya. It emphasizes the significance of capital expenditure, market conditions, and expected returns while also shedding light on potential hurdles that need to be addressed for the betterment of these cooperatives.

2.3 Empirical Review

The four study objectives serve as a guide for this literature view of the research study.

2.3.1 Expansion Decisions and Profitability

Business expansion denotes growth, which is an important goal in a company's wealth maximization aspirations. It is a tactic employed to generate income for a SACCO, usually leading to the acquisition of an asset and other resources. (Adelino & Robinson, 2017). Investment choices involve diversifying the sources of an organization's income or adopting a strategy that involves starting or acquiring a company that is unrelated to the organization's current markets and products. It entails having multiple revenue-generating sources. In order to help managers and investors make informed decisions about investment portfolios, diversification has attracted a lot of scholarly attention, according to Oyedijo (2012). SACCOS is motivated by a desire to acquire benefits from economic growth and development. A firm faces numerous problems and hazards as it enters a new market, competes, and invests, regardless of mass influence; it seeks to succeed in any business operation. SACCOs expand to provide greater consumer coverage, increase surpluses and decrease deficits, and increase customer wealth by paying out more dividends. Several studies have shown why firms expand and what happens as a result.

"The Nature of the Relationship between International Expansion and Performance": The Scenario of the Emerging Market was a five-year study conducted by Farok et al. (2017) on 269 Indian enterprises in the manufacturing and service industries between 1997 and 2001. The research indicates that businesses in the service sector miss out on the advantages of globalization more quickly than businesses in the industrial sector. In his paper "The Importance of Asset Allocation," Roger (2010) asserts that 40, 90, and 100% of fund performance may be explained by the asset allocation policy. As a result, the distribution of resources among investment channels determines the overall performance of each investment track. Vishal et al.'s (2017) investigation into the profitability of 353 publicly traded US retailers between 1985 and 2003 focused on the impact of firm size and sales growth rate.

Richard, Jonathan, and Sharon (2014) looked into how the state of the economy affects the growth of foreign franchises. Using a panel regression model, they examined organizations that operate international franchise operations under various conditions. Their research also revealed that the economic environment of a nation is a good determinant of foreign companies expanding there. In order to increase revenue, Rose (2003) claims that contemporary credit unions have increased their services and investments. Some now deal in life insurance, and others, in nations where such activity is permitted, serve as brokers for group insurance plans. To increase revenue, many credit unions now provide 24-hour e - services, financial management, retirement investments, and loans for home equity and payment services. The list of securities that credit unions are permitted to invest in is constrained by national regulations.

Kipkorir et al. (2016) examined different investments in Baringo County and assessed the profitability of SACCOs. Loans to members, government securities, FOSA, and real estate were the predictor factors for the registered SACCOs' financial success. A descriptive survey approach was used with 316 participants from the 73 register SACCOs as the focus group. 177 contacts were chosen as the sample size using stratified sampling. Data from a primary source was used. A combination of descriptive and inferential statistics were used to analyze the data that had been gathered. It was observed that the aforementioned variables had a perfect bearing on how well SACCOs performed, with FOSA activities taking the lead, followed by lending to members and then the government, while real estate lagged.

Decisions on expansion are critical for a company's success since they have a direct impact on revenue and market share. According to a study conducted by Brouthers and Hennart (2007), companies that strategically expand into new markets or regions tend to be more profitable than those who do not. This is because growth enables businesses to reach new client groups, boost economies of scale, and acquire a competitive advantage. Furthermore, the choice to grow should be based on extensive market research and analysis to identify

prospective opportunities and analyse the level of competition in the target market. It is critical for businesses to grasp the cultural, economic, and legal variations in the new market in order to properly design their products or services and establish a successful market strategy. Moreover, according to a study done by Chen and Yu (2016), Expansion decisions are critical in establishing a company's profitability. This is because, businesses that proactively expand into new markets or locations have the potential to grow their income and market share, due to the fact that growth enables firms to reach new client segments, expand their product offers, and acquire a competitive advantage.

Expansion decisions and profitability are two critical factors that influence investment decisions in a firm. When considering expansion, a company must carefully evaluate the potential profitability of the investment to ensure it aligns with their long-term goals and objectives. This involves conducting thorough market research, analysing financial projections, and assessing the risks involved. By assessing the profitability of an expansion decision, a firm can make informed investment choices that maximize their returns and contribute to sustainable growth. Additionally, considering profitability helps companies allocate resources effectively and prioritize investments that have the potential to generate the highest returns. This allows businesses to make strategic decisions that optimize their financial performance and increase their competitive advantage in the market. Moreover, evaluating profitability also enables companies to identify any potential challenges or obstacles that may affect the success of their investments, allowing them to proactively address these issues and mitigate risks.

2.3.2 Replacement Decisions and Profitability

The top management of a corporation has the responsibility to choose investments. To achieve the desired outcomes, management must replace the firm's investment if it is not operating as anticipated or producing the anticipated return. Cooperatives invest member money in a variety of profitable investment opportunities. They also enhance the well-being of management and

employees. Through internal promotions or external recruitment, new hires can be made at a cost comparable to that of management personnel if existing employees fall short of expectations. Pandey (2008) claims that replacement investment requires making choices on recommitting funds when an asset loses its productivity or profitability. Muli Abednego (2016) looked into how SACCO's performance was impacted by investment decisions. The top management of a corporation has the responsibility to choose investments. To achieve the desired outcomes, management must replace the firm's investment if it is not operating as anticipated or producing the anticipated return. Cooperatives invest member money in a variety of profitable investment opportunities. They also enhance the well-being of management and employees. Through internal promotions or external recruitment, new hires can be made at a cost comparable to that of management personnel if existing employees fall short of expectations. Pandey (2008) claims that replacement investment requires making choices on recommitting funds when an asset loses its productivity or profitability. Muli Abednego (2016) looked into how SACCO's performance was impacted by investment decisions. As a result, the probability of firing coaches nearly doubles for every standard deviation rise in performance expectation.

According to a study by Chen et al. (2017), making timely and informed replacement decisions can significantly impact a company's financial performance. Additionally, the study found that companies that regularly evaluate their assets and make proactive replacement decisions tend to have higher profitability compared to those that delay or neglect such decisions. Munyiri and Wekesa (2017) conducted research to determine the effect of replacement cash flows on the growth of SACCOs in Nairobi County because the cooperative sector contributes significantly to Kenya's socioeconomic development. From 2013 to 2015, a comprehensive research technique was used to collect data from 41 SACCOs in Nairobi County. Financial flow and growth were measured in the research using member contributions

and credit requests, as well as profitability and turnover. According to an estimation from a multiple regression model used in the research that is relevant to this inquiry, the growth of SACCOs in Nairobi County was positively correlated with replacement. According to the research, cash flow increased after rules requiring the maintenance of liquidity levels at a certain ratio were implemented. This study provides background information on the capital structure and operations of SACCOs. This information is relevant to this inquiry. Mark and Robert (2018) investigated the value of replacing assets from within the firm versus external recruitment in their paper Effect of Managerial Succession on Firm Profitability. They contended that when subsequent CEOs are chosen from outside the company rather than within, comparative performance advances are more visible and positively associated with institutional ownership. Siddika *et al*. (2007) emphasized in their study on the effects of boiler aging on replacement decisions that no single essential element, such as age, decides whether a boiler is too old for operations. According to the research, before making replacement choices, a combination of the boiler's performance characteristics, structural integrity, and environmental performance should be examined.

When it comes to replacement decisions, firms need to carefully assess the costs associated with replacing assets, including the purchase price, installation costs, and any potential disruptions to operations during the replacement process, and the potential increase in profitability that can be achieved through investing in new assets or equipment. Additionally, they must consider the expected benefits of the new assets, such as increased efficiency, reduced maintenance costs, or improved product quality. Profitability analysis also involves estimating the future cash flows generated by the new assets and comparing them to the costs of replacement. By considering both the costs and potential benefits, firms can make informed decisions that maximize profitability and ensure efficient utilization of resources.

2.3.3 Renewal Decisions and Profitability

Decisions about modernization are also known as renewal decisions. Decisions about renewal are made to re-energize a particular organizational ability, such as managing assets, worker productivity, or goal accomplishment. Companies must modify their operations to fight and maintain market share in the current unstable business environment. Decisions about renewal are made with the goal of keeping company portfolios while enhancing delivery through organizational effectiveness. (Organization for Economic Cooperation and Development, OECD, 2008). Dynamic turbulence and competition, both of which are heavily influenced by globalization, have had a significant effect on the current business climate. This dynamism necessitates organizations to continuously assess their internal procedures, modernize their management strategies, and maintain a focus on improving efficiency and efficacy in order to attract the well-educated, empowered consumers who have easy access to international goods and information. (Pearce & Robinson, 2011). This necessitated rerouting the organization's investment strategy based on the viability of the investment strategies that add value to the company. Options for "re-energizing" organizational capacities in terms of asset operations, employee productivity, and goal achievement are at the centre of the study's focus on renewal or modernisation decisions.

According to Martin et al. (2013)'s study on the effects of performance feedback and organizational learning on these actions, strategic renewal decisions unintentionally boost the effectiveness of performance feedback. Jeffrey and Jeffrey made some discoveries in their 2012 analysis of Accounting for Lease Renewal Options. In The Informational Effects of Unit of Accounts Options, it is argued that the installation of renewal options has a detrimental influence on lenders' willingness to offer credit to a company that has such choices. Yiming, Siqi, Thomas, and Thomas (2011) investigated whether banks change loan interest rates for clients and use borrowers' financial success when deciding whether to renew loans. The study performed a multivariate regression analysis on Chinese public industrial firms from 2000 to

2005 and discovered a negative relationship between loan renewal and borrowers' financial performance. However, the research suggests that renewal decisions may not be suitable for all investments, but rather for those that are favoured by the business environment.

According to a 2014 study by Karago and Okibo, SACCO's investment decisions affect how profitable the organization is. They thus advised SACCOs to make sensible investments in order to increase returns. They found that 68% of SACCO assets were used to advance loans to members and that 70% of these loans were non-performing. This suggests that SACCOs should think about diversifying their investments in smart schemes in order to increase profits. Renewal decisions play a crucial role in determining the profitability of investment decisions within a firm. When making renewal decisions, firms need to carefully evaluate the potential returns and risks associated with continuing an investment. This involves analysing factors such as market conditions, the competitive landscape, and future growth prospects to assess whether renewing an investment will yield profitable outcomes. Additionally, firms must consider the cost of renewal and compare it with alternative investment opportunities to ensure that the chosen path maximizes profitability.

2.3.4 Research and Development Decisions and Profitability

Making decisions on R&D involves undertaking experimental actions to find new products or enhance those that already exist. R&D is essential for a business's expansion and success. To increase their competitiveness and profit potential, businesses engage in research and development. A firm's own investments in R&D, physical capital, human capital, marketing, and competitive pressure from other companies inside and outside the industry all have an impact on the sales performance, profitability, and growth of the company. On R&D and productivity, a ton of theoretical and empirical research has recently been published. The literature still lacks information on crucial relationships despite substantial advancements. Compared to, among other things, the influence of R&D intensity on corporate economic

success, the negative relationship has received substantially less attention. The current empirical results are frequently ambiguous, and little is known about the intricate structure of the relationship or the connections between firm performance and R&D activities.

However, it is not immediately apparent whether such a relationship exists with a high probability. Cash flow, productivity, and profit are just a few of the variables that affect how much money is available for actual investments as well as for R&D. Because of the dynamic nature of the contemporary business environment, thriving businesses must make these decisions. Cooperatives, like other businesses that provide similar services, will have to focus on the items they provide rather than the customer's perception of them. The dynamic nature of customer wants will also be taken into consideration because clients change on a regular basis. To ascertain the influence R&D has on business profitability, this study compares the funds used in each financial quarter of cooperatives to profitability determined by deficits/surpluses. Prior studies have shown a strong positive association between investment choices and an organization's productivity as measured by its financial success, claim Cohen and Klepper (1996). Higher effective productivity, higher sales turnover, and higher profit margins for companies are likely to arise from better capital investment decisions, all of which have a beneficial impact on financial performance (Ericson & Pakes, 1995). In essence, wise investment choices lead to improved financial performance and outside funding. In order to ensure that a firm has enough levels of liquidity, for example, protection for investments in R&D generally and in particular helps (Donaldson, 1961). Investment decisions must be based on projected results or product demand and how these elements effect a company's financial success. Investments based on market expectations sensitivity enable the firm to successfully battle competitive pressure from other firms inside or outside the organization, confirming profitability and the firm's growth (Levasseur, 2002). This is done by successfully increasing

the firm's intended sales performance. Businesses invest in R&D to improve their profitability and competitiveness. This improves their financial performance.

Cohen and Klepper conducted research on the links between business performance and the cross-sectional structure of investment choice functions in 1996. Information from three different Swedish innovation surveys that were conducted throughout time was used to support the empirical finding. We applied a well-known multi-step estimate method that takes simultaneity and selection biases into consideration. As evaluated as a percentage of sales associated with new goods and methods at the corporate level, the findings revealed evidence of a substantial and very significant association between R&D spending and higher productivity through innovation production. They then conducted a temporal dimension analysis on the businesses that took part in the 1998 national innovation survey using a simple forward-backwards study. They discovered that R&D investments are a reliable predictor of future growth in the majority of firms, not just in terms of returns and employment, but also in terms of sales and value-added. (Avkiran, 1995) discovered the same 28 related findings.

A mounting loss for the firm was also not anticipated by any investment in fields like R&D, or even if it did exist at all. The backward analysis reveals that profit, value-added, and sales growth rate are fairly reliable predictors of future R&D intensity. In contrast, the rates of equity and debt growth are inversely correlated with future investment choices, which reflect the level of R&D. Investment decisions have no impact on the capital stock, according to a straightforward descriptive statistical forward and backward assessment. "Impact of the interaction between R&D and Marketing on new product performance: an empirical investigation of Chinese high technology enterprises," by Li and Atuhene (2011), found that marketing influence on product decisions and information exchange have observably positive effects on new product performance. The results demonstrate that project formalization and product distinctiveness both have an effect on R&D-marketing links.

R&D does not lead to greater firm revenues, claim Shrihari et al. (2013). An American panel of publicly traded high-tech manufacturing firms was employed in the study to examine the dynamic links between R&D, advertising, inventories, and company success. The "The Effect of R&D Intensity on Managerial Compensation in Large Organizations" study by Milkovich et al. took into consideration organizational variances in person and job factors by using data from 110 organizations obtained over a five-year period. According to the study, strong R&D aggressiveness is associated with higher comparable basic salaries, larger connected bonus payments, and more astounding relative eligibility for long-term incentive payments. Hassan and Brahim conducted research on the impact of R&D spending on the profitability of Turkish manufacturing enterprises in 2014. According to the report, investing in R&D improves a company's bottom line. In a 2013 study on The Impact of Government R&D Subsidies on a Firm's Overall Performance in Korean Small and Medium Enterprises (SMEs), Boem et al. employed value-added productivity to assess performance. The study discovered considerable evidence that public R&D subsidies improve productivity by successfully increasing SMEs' R&D investment and value-added productivity.

Regression analysis was used by Lawrence (2011) to examine the relationship between R&D spending and the profits of 16 well-known US pharmaceutical companies. The study discovered a strong and favorable relationship between R&D spending and market value in the pharmaceutical industry. In contrast, Kenneth (2010) found an antagonistic relationship between recent performance and qualitative disclosure in his research on how recent performance affects a firm's incentive to disclose qualitative R&D-related information. Research and development (R&D) choices have a significant impact on a business's profitability. According to a study by Jones and Kato (2018), businesses that invest more in R&D typically have higher profits. This is because R&D activities often lead to the development of innovative products or improved processes, which can give companies a

competitive edge in the market. Furthermore, R&D investments enable companies to stay ahead of technological advancements and adapt to changing consumer preferences. A study by Smith and Johnson (2019) found that companies that consistently invest in R&D are better equipped to respond to market disruptions and maintain a sustainable competitive advantage. This is because ongoing research and development efforts allow companies to continuously improve their products and services, ensuring they meet the evolving needs of customers. Additionally, R&D investments can lead to cost-saving innovations, such as more efficient production methods or the use of alternative materials, which can positively impact a company's profitability by reducing expenses.

R&D activities involve exploring new technologies, developing innovative products or services, and improving existing processes. By allocating resources towards R&D activities, companies can enhance their innovation capabilities, develop new products or services, and gain a competitive edge in the market. However, it is important for firms to carefully evaluate the potential returns on their R&D investments to ensure they align with their overall business strategy and financial goals. Additionally, firms must also consider the risks associated with R&D projects, such as uncertain market demand, technological obsolescence, and regulatory hurdles. These risks can impact the success and profitability of the investment decision. Therefore, firms need to conduct thorough market research, analyse industry trends, and assess their own capabilities before committing significant resources to R&D projects. Moreover, establishing effective project management practices and continuously monitoring the progress of R&D activities can help mitigate these risks and increase the likelihood of achieving desired outcomes.

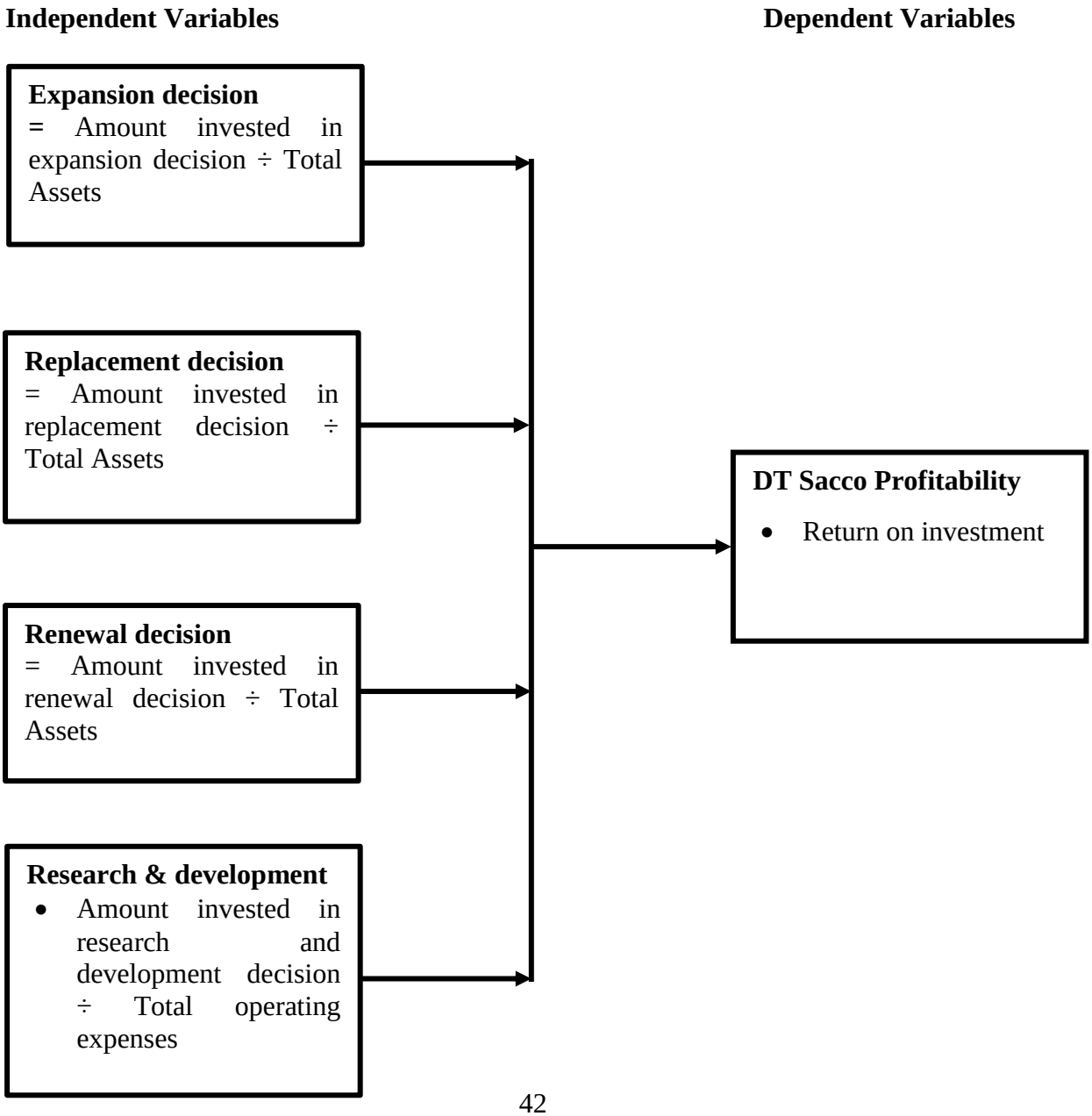
2.4 Conceptual Framework

As an integrating ecosystem that enables researchers to purposefully convey all aspects of an examination at once through a process that highlights their links, inconsistencies, overlays,

frictions, and the contexts influencing a research setting and the study of phenomena in that setting, the conceptual framework acts as both a ROI map and a foundation for research (Ravitch & Riggan, 2016). Creating a conceptual framework includes knowing how research variables connect to one another and visually or diagrammatically demonstrating that understanding (Mugenda and Mugenda 2003). The conceptual framework illustrates the relationship between DT-SACCOs' investment decision and Profitability.

FIGURE 1

Conceptual Framework



2.5 Operationalization of Variables

The table below shows how the variables of the study will be operationalized.

TABLE 1

Measurement of Variables

Variables		Measures	Notations
Dependent variable	**SACCO profitability**	Net income / Total Capital Invested	**ROI**
Independent Variables	**Expansion Decision**	Total expansion costs / Total Assets	**EXP**
	Replacement Decision	Total replacement costs / Total Assets	**REP**
	Renewal / Modernization Decision	Total renewal costs / Total Assets	**REN**
	Research and Development Decision	R&D expenses / Total Operating Expenses	**RND**

Source: Researcher 2023.

2.6 Summary of literature

The Accelerator Model of Investment, Transaction Cost Theory, Modern Portfolio Theory, and Q Theory of Investment were used as the foundation for the study. The Accelerator Model emphasizes the connection between investments, income, and demand, and is based on Keynes' observation that investment return is caused by the impact of recent production on investor expectations. The MPT demonstrates a balanced relationship between an investment decision and product performance. The MPT seeks to maximize the portfolio's expected return for a given level of portfolio risk or reduce risk for a given level of projected return. Ronald Coase's transaction cost theory states that transactions conducted within a corporation may result in lower costs than market transactions. Tobin's Q theory states that investments should be made only if the average Q is higher than one.

Business expansion is an important goal in a company's wealth maximization aspirations. It requires bROIdening an organization's revenue sources or pursuing a strategy that includes launching or acquiring a firm unrelated to the organization's current markets and products. Several studies have been conducted to determine why businesses expand and what happens as a result of that expansion. According to Farok et al. (2017), service-sector organizations lose out on globalization benefits sooner than industrial businesses. According to Roger (2010), how a firm allocates its resources among investment channels influences the overall success of each investment track. Between 1985 and 2003, Vishal et al. (2017) researched how the size of a company and the rate of sales growth affected the profitability of 353 publicly traded US retailers. The economic environment of a country, according to Richard, Jonathan, and Sharon (2014), is a good predictor of foreign firms expanding there. Credit unions, according to Rose (2003), have increased their services and investments in order to increase revenue. Kipkorir et al. (2016) discovered that loans to members, government securities, FOSA, and real estate were predictors of registered SACCO financial success. Businesses can benefit from economies of scale and extensive market coverage with a solid plan for local market growth. A profitable expansion plan in local markets, according to Porter (1990), would motivate a firm to employ the same strategic expertise and experience in international markets.

The top management of a firm is in charge of selecting investments to attain the desired goals. The top management of a firm is in charge of selecting investments to attain the desired goals. Cooperatives invest member funds in a variety of profitable investment opportunities, enhancing management and employee well-being. Muli Abednego (2016) evaluated the impact of investment decisions on SACCO performance and discovered that firing coaches roughly doubles for every standard deviation rise in performance expectation. Munyiri and Wekesa (2017) evaluated the effect of cash flows on SACCO growth in Nairobi County. The findings

revealed that when regulations requiring the preservation of liquidity levels were enacted, cash flow increased. According to Mark and Robert (2018), when CEOs are hired from outside the company, comparative performance gains are more visible and are favourably associated with institutional ownership. Before making replacement decisions, Siddika et al. (2007) emphasized the importance of examining a combination of boiler performance characteristics, structural integrity, and environmental performance.

To reenergize organizational competencies including asset management, worker productivity, and goal achievement, decisions on modernization are made. Companies must adapt their practices in order to compete and keep market share in the challenging business environment of today. Martin et al. (2013) claim that strategic renewal options improve the effectiveness of performance feedback. According to Jeffrey and Jeffrey (2012), lenders' willingness to make loans is constrained by renewal choices. Yiming, Siqi, Thomas, and Thomas (2011) found a bad correlation between borrowers' financial performance and loan renewal. According to Karago and Okibo (2014), SACCOs should diversify their assets in clever schemes to increase profitability. In order to assess the impact of R&D on business profitability, this study compares money used during each financial quarter of cooperatives to profitability as measured by deficits/surpluses. Previous studies have discovered a correlation between investment decisions and a firm's productivity as assessed by financial performance. According to Hassan and Brahim, investing in R&D enhances a company's bottom line, and Boem et al., public R&D subsidies improve productivity.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the proposed research methodology used in the study. In this section, the researcher discusses the overall research strategy that integrates the different components of the survey coherently and logically. In the bargain, this section ensured that the research problem is addressed. Additionally, the section constitutes the blueprint for collecting, measuring, and analysing data as collected. Further, the researcher discussed the entire group that the researcher wants to conclude about and the specific group to collect data. The research will cover the 47 DT SACCOS in Nairobi in Kenya as the population. Eventually, the researcher will discuss the data analysis procedure to extract insights that support decision-making

3.2 Research Design

The research used a descriptive survey research methodology, which is appropriate for studies that seek to characterize firm characteristics, determine the proportion of firms with distinguishing characteristics, and make predictions. The goal of descriptive research is typically to collect data about current conditions without changing the original observation. Odoh and Chinedum (2014) claim that a research design is used to address the study's difficulties. However, it is thorough software that demonstrates everything the researcher tries to do, from creating the proposal through writing the final data report. This study claims that by using scientific methodologies to describe the phenomenon as it truly occurs, it adopts the correlational research design advanced by Ambrose and Vincent (2014). To help with the integration of research and practice and to better understand the dynamics of the situation, time-series data will be obtained for the years 2018 through 2021.

This data was obliged in determining and measuring the correlations of variables in the study against the profitability performance of the sample data. The independent variables have a significant sting in predicting the SACCOS performances. These are some indicators of SACCO's performances; hence the figures obtained will share insights into how positive or negative the results are and enable us to get clear inferences of investment decisions on the DT SACCOS. The research provided specific and relevant recommendations on the relation findings.

3.3 Target Population

Mofolo-Mbokane (2011) asserts that the population is the total assemblage of factors from which judgments are to be rendered. The study population consisted of forty (40) DT SACCOS located in Nairobi County as at 31st December 2021. Financial cooperatives and Non-financial cooperatives were the two categories into which these SACCOS were divided. According to Odoh and Chinedum (2014), target population is the main point for generalizing study findings. The information was gathered by the researcher through extracting it from annual reports and accounts for the time periods specified under study.

3.4 Sampling and Sampling Design

According to Lohr (2019), sample design is a technique for selecting a specific participant from the group under examination in order to derive mathematical inferences and evaluate the expectations of the entire community through a research study. To reduce time and money, many research use sampling procedures. According to Etikan (2016), the sampling technique selects elements from the target population to represent. The research population consisted of forty (40) DT SACCOS licensed in Nairobi County as of the end of 2021. The researcher's motivation for drawing a representative sample from the 40 SACCOS that accept deposits is due to new entrants to the market who have not survived more than four years, those that can't support the trend, which means there is no uniformity in the time on the market, and those that

are halted amidst the study period. The researcher examined information taken from yearly reports and accounts for the population of the study for the years (2018-2021) licensed DT SACCOs as of December 31, 2021.

3.5 Research Instrument

The data collection methods are the methodical approach used by the researcher to assemble data for research (Mofolo-Mbokane, 2011). Data collected holds the key to the hidden meaning of the information under examination. Secondary data from all forty (40) DT SACCOs in the target population were used in this investigation. The collected data entails the investment amount various DT Sacco's have made for a four-year period from 2018-2021. Data obtained is treated as truthful and factual. The data gave us the statistical inference to compare different performances of investment decisions in different periods of understudy.

3.6 Data Collection Procedure

The study relied of secondary data as published by the DT-SACCOs to come up with answers to all the research questions. During the study period, the researcher received pertinent information gathered from annual reports and account information for the specified time period for the licensed DT SACCOS, which aided the study. The data covered the immediate prior years 2018- 2021 for reliability for the 40 licenced DT-SACCOs in Nairobi County.

3.7 Data Processing and Analysis

The data analysis process reviews collected data, cleans it, converts it to suit user needs, displays data to highlight helpful information, suggests conclusions, and supports decision-making (Etikan, 2016). However, studies on the effects of investment decisions on financial Diagnostics tests was conducted to look for any violations of regression assumptions. To determine the type of connection between both investment decisions and SACCO revenue and profits, financial records from 2018 to 2021 were used to estimate the total amount invested on investment activities for each company over a four-year period. Using simple regression

analysis, the relationship between investments decision and profitability measures as ROI was then established. The amounts invested was regressed against profitability indicators for the same period. Last but not least, by use of excel analysis format and analysed data displayed by the use of tables was to produce the study's results.

Model

Linearity, normality, stationarity, Multicollinearity Test was used among the analyses to be performed. The linearity test was achieved using scatterplot testing of F statistics in ANOVA. The collected data was coded and analysed using the excel spread. The scholar used a panel regression model. Panel Regression was able to estimate the coefficients of the linear equation containing one or more independent variables that best predicted the value of the dependent variable.

The regression model used to determine the type of relationship between investments and performance measures was as follows:

$Y= \beta+ \beta i X1 + \beta ii\ X2+ \beta iii\ X3 + \beta i v\ X4 +\varepsilon$

Y denotes the performance indicators of the returns (ROI)

$\beta 0$= Intercept term,

$\beta i, \beta ii, \beta iii, \beta i v$ = model coefficients of the independent

Variables, X1= Renewal decision, X2 = Expansion decision X3= replacement decision, X4 = research & development decision and ε= error term

3.8 Diagnostic Test

The connection between the variables X and Y can be represented by the equation y=bX, where c is a constant, in accordance with the linearity assumption. The linearity test was determined using the scatter-plot test, also known as the F value in ANOVA. When performing a test, make sure that the data's mean, variation, and autocorrelation structure do not change over time. The sequence map served as the basis for this determination. The normality test assumes that the

residual of the response variable has a normal distribution centered on the mean. To establish normality, the Kolmogorov-Smirova test or the Shapiro-Wilk test was used. The autocorrelation of a time series shows how comparable it is to a value of the same series that has been lagged over a number of time periods. When two or more predictor variables exhibit an exact or nearly linear connection, this is known as multi-collinearity. A matrix's determinant, which has a spectrum of zero to one, was examined to see if it was multi-collinear. The orthogonal predictor variable demonstrates that multi-collinearity increases as the linear reliance approaches zero. The variance inflation factor (VIF) and degree of tolerance were calculated to demonstrate the strength of Multicollinearity. (Burns & Burns, 2008)

3.8.1 Normality Test

In statistics, a normality test is a statistical procedure used to determine if a given dataset follows a normal distribution. It helps to assess whether the data is normally distributed or not, which is important for many statistical analyses that assume normality. By conducting a normality test, researchers can make informed decisions about which statistical tests are appropriate for their data and interpret the results accurately. Skewness and kurtosis tests were used in the study to test if the independent and the dependent variables follow a normal distribution pattern. Lack of symmetry (skewness) and pointiness (kurtosis) are two main ways in which a distribution can deviate from normal.

3.8.2 Multicollinearity Test

The Multicollinearity test is a statistical analysis technique used to assess the degree of correlation between independent variables in a regression model. It helps identify if there is a high level of interdependence among the predictor variables, which can lead to issues such as unstable and unreliable coefficient estimates and difficulty in interpreting the individual effects of each variable. This test is crucial in determining the validity and interpretability of regression results, allowing researchers to make informed decisions about the inclusion or exclusion of

variables in their models. The Multicollinearity test, based on the Variance Inflation Factor (VIF), was employed for assessment. When VIF exceeds 10, it indicates a high degree of Multicollinearity, signifying a significant linear relationship among predictors and the norm (Alin, 2010). As a general rule of thumb, Multicollinearity can be considered acceptable when VIF is less than 5. If substantial Multicollinearity is detected, one of the strongly correlated variables should be removed (Daoud, 2017). The VIF test will reveal whether all predictor variables fall within the threshold of 5, indicating the absence of a high Multicollinearity concern. This demonstrates that there is no risk of encountering issues related to elevate Multicollinearity.

3.8.3 Heteroscedasticity Test

The heteroscedasticity test is a statistical technique that determines if the variance of errors in a regression model is uneven across levels of the independent variable(s). It helps identify whether there is a systematic pattern in the variability of residuals, which can affect the reliability and accuracy of the regression results. This test is crucial in ensuring that the assumptions of homoscedasticity, or equal variance, are met for valid and robust statistical inference. Breusch-Pagan test was used to test for Homoscedasticity.

3.8.4 Autocorrelation Test

Autocorrelation measures the linear relationship between consecutive observations in a time series or panel of data. By examining the residuals of a regression model, the autocorrelation test helps identify if there is a systematic pattern of correlation between these residuals. By analysing the autocorrelation function, this test can provide insights into the underlying patterns and dependencies within the data, ensuring accurate statistical inference. An assumption of linear regression models is that the errors of the model are independent of each other (not correlated), however, when this assumption is not fulfilled in the context of time- series research, then the errors are viewed as dependent or auto-correlated. This study used the

Wooldridge test to test for autocorrelation in order to detect the existence of autocorrelation in the data, that is, whether or not the residual is serially correlated over time.

3.8.5 Hausman Test

The Hausman test is a statistical test used in econometrics to determine whether the random effects or fixed effects model is more appropriate for a given dataset. It helps researchers choose between the fixed effects model, which allows for correlation between these effects and independent variables (the presence of endogeneity), and the random effects model, which presupposes that individual-specific effects are uncorrelated with independent variables. The test compares the effectiveness of the two models and determines whether there is a significant difference by computing a chi-squared statistic.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

In this section, the researcher presented the analysis, outcomes, and interpretation of the data derived from both SASRA and individual Sacco's financial reports. The primary objective of this study was to assess the impact of investment choices on the profitability of SACCOs in Nairobi County. The variables under scrutiny were the indicators of investment decisions, while the profitability of SACCOs was measured using the ROI, calculated as the ratio of total investment costs to total assets. The study employed regression analysis to examine how the study variables responded concerning the study's objectives. To assess the model's goodness of fit, an analysis of variance was conducted. The findings have been presented through tables and figures for clarity and comprehension.

4.2 Descriptive Statistics

This section presents the descriptive statistics on the study variables including measures of central tendency of variables. The results in Table 4.1 shows descriptive statistics on study variables. According to Kothari (2012), descriptive analysis is a method of summarizing and presenting data in a meaningful and easily understandable way. It involves the use of various statistical techniques to organize, describe, and summarize the main characteristics, patterns, and trends within a dataset. The primary goal of descriptive analysis is to provide a clear and concise overview of the data, enabling researchers and stakeholders to gain insights and make informed decisions. In the present study, the descriptive analysis was done using the mean, minimum, and maximum values of the variable along with the standard deviation. This information is shown in Table 4.1 below.

TABLE 2

Descriptive Analysis

Variable		Mean	Std. Dev.	Min	Max	Observations	
EXP	overall	.4666667	.3844669	.12	2.17	N =	159
	between		.2204806	.23	1.035	n =	40
	within		.3161001	-.2533333	1.941667	T-bar =	3.975
REP	overall	.4513396	.3038112	.05	1.25	N =	159
	between		.2434551	.135	.895	n =	40
	within		.1854369	-.0611604	1.02384	T-bar =	3.975
REN	overall	.4681258	.293666	.1	1.25	N =	159
	between		.2338075	.1566667	.8975	n =	40
	within		.1813172	-.0068742	1.040626	T-bar =	3.975
RND	overall	.1058942	.0348783	.0148867	.2111111	N =	159
	between		.021813	.0689977	.1503847	n =	40
	within		.0273464	.0363567	.1935834	T-bar =	3.975
ROI	overall	.0560983	.170701	-.888016	.48	N =	159
	between		.1064253	-.2973163	.2313053	n =	40
	within		.1347179	-.5346015	.4377498	T-bar =	3.975

The expansion metric, calculated by dividing total expansion costs by total assets, assesses a company's efficiency in allocating and utilizing resources. A higher expansion ratio signifies a strong commitment to expansion, while a lower ratio indicates limited investment in growth opportunities. As displayed in Table 4.1 above, the expansion (EXP) variable had a mean of 0.4667 with a standard deviation of 0.384. The minimum value for this variable was found to be 0.12 with a maximum of 2.17. The implication in this finding is that for every unit of total asset in the DT-SACCOs, there was a 0.4667 investment in expansion. The standard deviation of 0.384 is relatively small, suggesting that the individual data points are clustered closely around the mean. In other words, the data values are not widely spread out; they are more concentrated near the average. This shows a fairly good investment among the organizations as they seek to open new branches or service points in different regions or communities can help them reach underserved populations. This can contribute to financial inclusion and provide access to financial services to people who previously had limited options. Moreover, expanding

into different financial markets or sectors can spread risk. For example, offering both savings and loan products can help balance the DT-SACCO's financial performance, as it can generate income from both interest on loans and fees for savings products.

The second independent variable in the study was the replacement decision. The variable, which evaluates the proportion of total replacement costs to total assets, provides insights into asset management and allocation efficiency. In the present context, replacement decision values ranged from the lowest of 0.05 to the higher of 1.25 with a mean of 0.451 and a standard deviation of 0.3038. This implies that on average the DT-SACCOs invested 0.451 of their total assets in replacement. Replacement decisions involve allocating a company's capital or financial resources. Choosing the right replacement option can ensure that resources are used efficiently and effectively, maximizing returns and minimizing unnecessary costs.

The renewal decision, which was measured by the amount of funds invested in renewing assets in the DT-SACCOs as a fraction of total assets, was the third independent variable in the present study. As shown in Table 4.1 above, the average value for the variable was 0.468 with a standard deviation of 0.294. The reported minimum value is 0.1 and the maximum is 1.25. This implies that on average, the DT-SACCOs invest 0.468 of their funds in renewal. The renewal decision in investment analysis typically refers to the decision to continue or renew an existing investment or project, often after its initial term or period has ended. The primary goal of the renewal decision is to assess whether it is financially beneficial or prudent to extend or renew the existing investment rather than terminating or discontinuing it. In the case of DT-SACCOs, it is shown that most of them make the renewal decision as shown by the low standard deviation of 0.294 which is close to the mean.

The last independent variable in the present study was the research and development investment decision. The Research and Development (R&D) investment decision refers to the process of determining how much financial resources an organization should allocate to

research and development activities. R&D investment is a critical aspect of a company's strategic planning, and it involves deciding how much funding to allocate to innovation, product development, and technological advancement. This decision plays a pivotal role in a company's ability to remain competitive, innovate, and adapt to changing market conditions. In the present study, and as shown in Table 4.1 above, the mean investment in the research and development was 0.106 with a minimum of 0.015 and a maximum of 0.211 and a standard deviation of 0.035. The variable was measured as the ratio between the amounts invested in research and development and total operating expenses. The descriptive results in the study show that on average, 0.106 of total operating expenses for the DT-SACCOs was expended in research and development.

The dependent variable in this study was DT-SACCO financial performance which was measured by the ratio between net income and total capital invested. Table 4.1 reports that the average ROI is 0.0561 with a maximum of 0.48 and a minimum of -0.088 and a standard deviation of 0.171. This implies that the DT-SACCOs are not generating profits that are adequate to cover their total capital invested as shown by the low average ROI of 0.0561.

4.3 Diagnostic Tests Results

4.3.1 Normality Test

Skewness and kurtosis tests for normality are statistical measures used to assess the shape and distribution of a dataset. Skewness and kurtosis tests were used in the study to test if the independent and the dependent variables follow a normal distribution pattern. Lack of symmetry (skewness) and pointiness (kurtosis) are two main ways in which a distribution can deviate from normal. Results for the test are shown in Table 4.2 below.

TABLE 3

Testing for Normality

Variable	*Obs*	*Pr (skewness)*	*Pr (kurtosis)*	*Adj chi2 (2)*	*Prob>chi2*
EXP	159	0.3100	0.1800	9.622	0.2200
REP	159	0.0705	0.2911	1.415	0.0733
REN	159	0.4304	0.4236	1.273	0.1636
RND	159	0.0760	0.3001	3.784	0.0650
ROI	159	0.0501	0.6010	4.211	0.4100

The results in Table 4.2 shows that the p-values for all the variables were higher than the critical 0.05 and thus it is concluded that there was enough evidence to reject the null hypothesis of there being no normal distribution and therefore it was concluded the data was normally distributed.

4.3.2 Multicollinearity (VIF)

The Multicollinearity test, based on the Variance Inflation Factor (VIF), was employed for assessment. When VIF exceeds 10, it indicates a high degree of Multicollinearity, signifying a significant linear relationship among predictors and the norm (Alin, 2010). As a general rule of thumb, Multicollinearity can be considered acceptable when VIF is less than 5. Results for the test are shown in Table 4.3 below.

TABLE 4

Multicollinearity Test Results

Variable	**VIF**
EXP	2.56
REP	4.21
REN	1.22
RND	3.98

Multicollinearity refers to the phenomenon in which two or more predictor variables in a regression model are highly correlated with each other. It is often quantified using the variance inflation factor (VIF), which measures the extent to which the variance of an estimated regression coefficient is increased due to Multicollinearity. In this case, the Multicollinearity test results indicate that the variable EXP has a VIF of 2.56, suggesting that there is no Multicollinearity in expansion to other variables. The variable REP, on the other hand, has a VIF of 4.21, indicating a weak correlation with other variables in the model. Additionally, the variables REN and RND have VIFs of 1.22 and 3.98 respectively, suggesting relatively no levels of collinearity. The independent variables' Variance Inflation Factor (VIF) values were found to be less than 10. According to O'Brien (2007), a Variance Inflation Factor (VIF) value of 10 or less demonstrates the absence of Multicollinearity among the predictor variables.

4.3.3 Heteroscedasticity Test

TABLE 5

Heteroscedasticity Test / Breusch-Pagan

Breusch-Pagan / Cook-Weisberg test for Homoscedasticity
Ho: Constant variance
Variables: fitted values of ROI
chi2(1) = 0.6625
Prob > chi2 = 0.1159

Based on the Breusch-Pagan test for heteroscedasticity, the null hypothesis of constant variance cannot be rejected at a significance level of 0.05. This suggests that the assumption of homoscedasticity holds for the fitted values of ROI. Therefore, we can conclude that there is no evidence of heteroscedasticity in the data. This means that the variability of the residuals does not depend on the fitted values of ROI, indicating that the model's assumption of constant variance is valid.

4.3.4 Autocorrelation

This study used the Wooldridge test to test for autocorrelation in order to detect the existence of autocorrelation in the data, that is, whether or not the residual is serially correlated over time. Results are displayed in Table 4.4 below.

TABLE 6

Autocorrelation / Wooldridge test

Wooldridge test for autocorrelation in panel data
H_0: no first-order autocorrelation
F(12, 30) = 1.25
Prob >F = 0.2224

The Wooldridge test is commonly used to detect autocorrelation in panel data. In this case, the null hypothesis (H_0) assumes no first-order autocorrelation. The test statistic, F (12, 30) = 1.25, indicates the strength of the relationship between the variables. With a p-value of 0.2224, we fail to reject the null hypothesis, suggesting no significant evidence of first-order autocorrelation in the panel data.

4.3.5 Hausman Test for Model Selection

TABLE 7

Hausman Test for Model Selection

	(b)	**(B)**	**(b-B)**
Variable	**Fixed**	**Random**	**Difference**
EXP	-.3081473	-.6761752	.3680279
REP	1.67951	1.179176	.5003337
REN	-1.429871	-1.927384	.4975131
RND	-1.272169	-1.719995	.4478258
chi2(4)	10.90		
Prob>chi2	0.0156		

The Hausman test is a statistical test used for model selection in econometrics. It helps determine whether a fixed effects model or a random effects model is more appropriate for the data at hand. The test compares the estimated coefficients from both models and assesses whether the random effects assumption holds true. If the p-value of the Hausman test is significant, it suggests that the fixed effects model should be preferred as it provides more

reliable estimates. However, if the p-value is not significant, it implies that the random effects model is more appropriate for the data. In this case, the fixed effect model is statistically significant in explaining the variation in the data compared to the random effects model. The p-value of 0.0156 suggests strong evidence against the null hypothesis, further supporting the preference for the fixed effect model.

4.4 Inferential Results

4.4.1 Correlation Analysis

Correlation analysis is a statistical technique for determining the degree and direction of linear correlations between two or more variables. Pearson correlation ranges from -1 to 1. A positive value indicates a direct relationship between variables, i.e., as one variable increases, the other also increases. A negative value, on the other hand, signifies an inverse relationship: as one variable increases, the other decreases. A value close to 0 would indicate no linear relationship. Correlation results for the study variables are shown in Table 4.6 below.

TABLE 8

Correlation between Study Variables

	EXP	REP	REN	RND	ROI
EXP	1.0000				
REP	0.3188	1.0000			
	0.0000				
REN	0.4205	0.1971	1.0000		
	0.0000	0.0000			
RND	0.1991	0.3563	0.5339	1.0000	
	0.0119	0.0000	0.0000		
ROI	-0.0839	-0.0434	-0.0178	-0.2067	1.0000
	0.0031	0.0074	0.0361	0.0090	

Table 4.6 above shows that the correlation between the expansion decision and financial performance is -0.0839 which is significant (p = 0.0031). This implies that for every unit increase in expansion decision, there is a 0.0839 significant drop in financial performance in the DT-SACCOs. The opposite movement is the two variables could be because expanding typically involves significant upfront costs, including capital expenditures for new facilities, equipment, technology, or personnel. These expenses can strain cash flow and lead to short-

term losses. Moreover, to attract customers or clients in new markets or regions, companies may need to invest in marketing and promotional efforts. These expenses can impact profitability in the short term as the company builds its customer base.

Information in Table 4.6 also shows that the relationship between the replacement decision and financial performance is a significant -0.0434 ($p = 0.0074$). This implies that for every unit increase in the replacement decision, there is a significant drop of 0.0434 in financial performance of the DT-SACCOs. When a SACCO decides to replace or upgrade its existing systems, technology, or infrastructure, there are often significant upfront costs associated with the purchase, implementation, and integration of new solutions. These initial expenditures can strain the SACCO's financial resources, leading to a decrease in short-term profitability. Moreover, during the transition from old systems or processes to new ones, there may be a learning curve for staff, which can temporarily impact productivity and efficiency. This can result in operational disruptions and higher costs.

The output in Table 4.6 also indicates that the correlation between financial performance and the renewal decision is negative and significant ($R = -0.0178$, $p = 0.0361$) which implies that a for every unit increase in the renewal decision, there is a 0.0178 drop in financial performance. The decision to renew or upgrade existing infrastructure, technology, or assets often involves significant upfront investment costs. These costs may include purchasing new software or hardware, renovating facilities, or upgrading equipment. These expenses can strain the SACCO's financial resources in the short term, leading to lower profitability.

Lastly, the correlation between research and development investment decision and financial performance as shown in Table 4.6 is -0.2067 which is significant ($p = 0.0090$). This implies that for every unit increase research and development costs, there is a significant decrease of 0.2067 in financial performance for the DT-SACCOs. Research and expense

expenditures are considered operating expenses, and when they rise significantly, they can increase the overall cost structure of the DT-SACCOs. This can lead to reduced profitability if revenue does not increase proportionally. Additionally, SACCOs often invest in R&D to develop new financial products or services, improve existing ones, or enhance operational efficiency. These investments may take time to yield results, and in the short term, they may not contribute significantly to revenue growth.

4.4.2 Regression Analysis

The overarching purpose of this study was to assess the impact of investment decisions on the profitability of Nairobi County SACCOs. The study specifically sought to assess the impact of the expansion decision on the profitability of SACCOs in Nairobi County; the impact of replacement decisions on the profitability of SACCOs in Nairobi County; the impact of the renewal decision on the profitability of SACCOs in Nairobi County; and the impact of the research and development decision on the profitability of SACCOs in Nairobi County.

The Hausman test was used to select between the fixed and random effects panel data methodology. The fixed effects model was preferred and the results of the results of the multiple linear regression are in Table 4.7 below.

TABLE 9

Regression Results

Fixed-effects (within) regression		Number of obs	= 159
Group variable: **ID**		Number of groups	= 40
R-sq:		Obs per group:	
within = **0.1627**		min	= 3
between = **0.0598**		avg	= 4.0
overall = **0.1193**		max	= 4
		F(4,115)	= 5.59
corr(u_i, Xb) = **-0.0462**		Prob > F	= 0.0004

ROI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
EXP	.0146527	.0481899	0.30	0.762	-.0808023	.1101077
REP	-1.539391	.5899791	-2.61	0.010	-2.708026	-.3707563
REN	1.567224	.5800811	2.70	0.008	.4181947	2.716253
RND	-1.143175	.5377173	-2.13	0.036	-2.208289	-.0780605
_cons	.0993113	.0546201	1.82	0.072	-.0088806	.2075033

The results presented in Table 4.7 above indicate that the decision to expand has a negligible and statistically insignificant impact on the profitability of SACCOs in Nairobi (β = 0.0147, p = 0.762 > 0.05). This suggests that, when keeping all other factors constant, each unit increase in expansion funding is associated with an insignificant 1.47 percent decrease in profitability. Essentially, this means that while there seems to be a positive trend in profitability related to expansion, this effect lacks statistical significance. In simpler terms, the observed rise in profitability attributed to expansion isn't robust enough to confidently distinguish it from random fluctuations in the data. According to Farok *et al*. (2017), expansion, while offering growth potential, also introduces risks such as heightened operational costs, competition, and the potential for losses in new markets. The insignificant positive effect may imply that SACCOs should fine-tune their risk management strategies when pursuing expansion.

The fixed effects regression results in Table 4.7 also show that the replacement decision has a negative significant effect (β =-1.539, p=0.010<.05) on profitability which implies that

there is a 153.9 percent significant decrease in profitability of the SACCOs in Nairobi, holding all other factors constant. The negative significant effect suggests that when replacement decisions are made, there is a measurable decrease in profitability. In other words, replacing certain assets, systems, or processes is associated with reduced financial performance. As asserted by Munyiri and Wekesa (2017), replacing existing assets or systems can disrupt operations, leading to downtime, inefficiencies, or additional expenses. These disruptions can contribute to a decrease in profitability during the transition period.

Results in Table 4.7 also show that the renewal decision has a positive significant effect on financial performance (β =1.567, p=0.008<.05) of the SACCOs, with the implication being that finds invested in renewal are increased by a unit, there is a significant positive increase of 156.7 percent in profitability of the SACCOs, holding all other factors constant. The positive significant effect indicates that when SACCOs make renewal decisions, there is a statistically measurable increase in their profitability. In simpler terms, renewing certain contracts, agreements, or memberships is associated with improved financial performance. As observed by Karago and Okibo (2014), renewal decisions likely result in cost efficiencies or savings. By renewing contracts or agreements with favourable terms, SACCOs can reduce operational expenses, contributing positively to their bottom line.

Lastly, the fixed effects panel data regression results in Table 4.7 show investment in research and development has a negative significant effect (β =-1.143, p=0.036<.05) on profitability of the SACCOs holding all other factors constant. This implies that for every unit increase in research and development investment, there is a significant drop in profitability by 114.3 percent, holding other factors constant. The significant reduction in profitability as investment in research and development are done could be because R&D investments often take time to yield results. While a company may have spent a substantial amount on research

and development, the benefits may not materialize immediately. It can take months or even years before a product or technology developed through R&D starts generating revenue.

Based on the results in Table 4.8, the fitted model is as follows;

$$FP = 0.0993 + 0.0147\,EXP - 1.539\,REP^{*} + 1.567\,REN^{*} - 1.143\,RND^{*}$$

4.5 Discussion of study Findings

4.5.1 Expansion

Based on the regression results for the first aim, which was to assess the influence of the expansion choice on the profitability of SACCOs in Nairobi County, the decision to expand has a small and statistically insignificant impact on the profitability of SACCOs in Nairobi ($\beta = 0.0147$, $p = 0.762 > 0.05$). Essentially, this means that while there seems to be a positive trend in profitability related to expansion, this effect lacks statistical significance. In simpler terms, the observed rise in profitability attributed to expansion isn't robust enough to confidently distinguish it from random fluctuations in the data.

This results agree with those by Farok *et al*. (2017) who carried a five-year study on 269 Indian firms in the manufacturing and service industries between 1997 and 2001 and found an insignificant effect of expansion as an investment decision on financial performance. The results also agree with those by Vishal *et al.* (2017) who studied how investment decisions and sales growth rate affected the profitability of 353 publicly traded US retailers between 1985 and 2003. Contrary to the findings, Richard, Jonathan, and Sharon (2014) who studied how the state of the economy affects the expansion of foreign franchises and reported a significant effect of expansion on firm financial performance.

4.5.2 Replacement

Fixed effects panel data regression results based on objective two which was to assess the effect of replacement decisions on profitability of SACCOs in Nairobi County show that the replacement decision has a positive significant effect on financial performance of the SACCOs,

with the implication being that finds invested in renewal are increased by a unit, there is a significant positive increase in profitability of the SACCOs, holding all other factors constant. The positive significant effect indicates that when SACCOs make renewal decisions, there is a statistically measurable increase in their profitability.

Results in this study are in tandem with those presented by Muli (2016) who studied how SACCO's performance was impacted by investment decisions. Elsewhere, the results are in agreement with those by Munyiri and Wekesa (2017) who conducted research to determine the effect of replacement cash flows on the growth of SACCOs in Nairobi County. The study results showed that replacement decision has a significant negative effect on profitability of firms. The results are however in conflict with those by Mark and Robert (2018) who investigated the value of replacing assets from within the firm versus external recruitment in their paper. Elsewhere, Siddika *et al*. (2007) emphasized in their study on the effects of replacement decisions that no single essential element, such as age, decides whether a boiler is too old for operations.

4.5.3 Renewal

The fixed effects regression results show that the replacement decision has a negative significant effect on profitability of the SACCOs in Nairobi, holding all other factors constant. The negative significant effect suggests that when replacement decisions are made, there is a measurable decrease in profitability. In other words, replacing certain assets, systems, or processes is associated with reduced financial performance. As asserted by Munyiri and Wekesa (2017), replacing existing assets or systems can disrupt operations, leading to downtime, inefficiencies, or additional expenses. These disruptions can contribute to a decrease in profitability during the transition period. The results are in agreement with those by Yiming, Siqi, Thomas, and Thomas (2011) who conducted a research to find out the effect of renewal decision on banks performance in China. The study performed a multivariate regression

analysis on Chinese public industrial firms from 2000 to 2005 and discovered a negative relationship between renewal and banks' financial performance. However, the research suggests that renewal decisions may not be suitable for all investments, but rather for those that are favoured by the business environment. According to a 2014 study by Karago and Okibo, SACCO's investment decisions affect how profitable the organization is. They thus advised SACCOs to make sensible investments in order to increase returns. They found that 68% of SACCO assets were used to advance loans to members and that 70% of these loans were non-performing. This suggests that SACCOs should think about diversifying their investments in smart schemes in order to increase profits.

4.5.4 Research and Development

Lastly, the fixed effects panel data regression results show investment in research and development has a negative significant effect on profitability of the SACCOs holding all other factors constant. This implies that for every unit increase in research and development investment, there is a significant drop in profitability, holding other factors constant. The significant reduction in profitability as investment in research and development are done could be because R&D investments often take time to yield results. While a company may have spent a substantial amount on research and development, the benefits may not materialize immediately. It can take months or even years before a product or technology developed through R&D starts generating revenue.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter served as the researcher's summary of the investigation's findings, conclusion, and advice to market players regarding future research.

5.2 Summary of Key Findings

The primary goal of this study was to assess the effect of investment decisions on the profitability of SACCOs in Nairobi County. The study specifically sought to assess the effect of the expansion decision on the profitability of SACCOs in Nairobi County; the effect of replacement decisions on the profitability of SACCOs in Nairobi County; the effect of the renewal decision on the profitability of SACCOs in Nairobi County; and the effect of the research and development decision on the profitability of SACCOs in Nairobi County. The significant results are summarized as below:

5.2.1 Expansion

The regression results for the first aim, which was to assess the effects of the expansion decision on the profitability of SACCOs in Nairobi County, show that the decision to expand has a negligible and statistically insignificant impact on the profitability of SACCOs in Nairobi. Essentially, this means that while there seems to be a positive trend in profitability related to expansion, this effect lacks statistical significance. In simpler terms, the observed rise in profitability attributed to expansion isn't robust enough to confidently distinguish it from random fluctuations in the data.

5.2.2 Replacement

Fixed effects panel data regression results based on objective two which was to assess the effect of replacement decisions on profitability of SACCOs in Nairobi County show that the replacement decision has a positive significant effect on financial performance of the SACCOs,

with the implication being that finds invested in renewal are increased by a unit, there is a significant positive increase in profitability of the SACCOs, holding all other factors constant. The positive significant effect indicates that when SACCOs make renewal decisions, there is a statistically measurable increase in their profitability.

5.2.3 Renewal

Results show that the replacement decision has a negative significant effect on profitability of the SACCOs in Nairobi, holding all other factors constant. The negative significant effect suggests that when replacement decisions are made, there is a measurable decrease in profitability. In other words, replacing certain assets, systems, or processes is associated with reduced financial performance.

5.2.4 Research and Development

Regression results show investment in research and development has a negative significant effect on profitability of the SACCOs holding all other factors constant. This implies that for every unit increase in research and development investment, there is a significant drop in profitability, holding other factors constant. The significant reduction in profitability as investment in research and development are done could be because R&D investments often take time to yield results.

5.3 Conclusions

Regression results based on the first objective which was to evaluate the effect of the expansion decision on the profitability of SACCOs in Nairobi County indicates that the decision to expand has a negligible and statistically insignificant impact on the profitability of SACCOs in Nairobi. It is concluded that while profitability may not have significantly changed with expansion, SACCOs could have other objectives for expansion, such as increasing their membership base, diversifying their services, or fulfilling regulatory requirements. These factors might have influenced their expansion decisions.

Regression results based on objective two which was to assess the effect of replacement decisions on profitability of SACCOs in Nairobi County show that the replacement decision has a positive significant effect on financial performance of the SACCOs. The study's findings suggest that when SACCOs in Nairobi County make replacement decisions, such as changing key personnel or management positions, it has a positive influence on their financial performance. This means that, on average, these replacement decisions are associated with improved financial outcomes for SACCOs.

Results show that the replacement decision has a negative significant effect on profitability of the SACCOs in Nairobi, holding all other factors constant. The negative significant effect suggests that when replacement decisions are made, there is a measurable decrease in profitability. The negative impact of replacement decisions on profitability suggests that, on average, SACCOs in Nairobi County may face challenges when making replacements in key personnel or management positions. These replacements may lead to disruptions, decreased performance, or other adverse effects on financial outcomes.

Regression results show investment in research and development has a negative significant effect on profitability of the SACCOs holding all other factors constant. The negative impact of R&D investment on profitability suggests that, in the context of the SACCOs studied, the resources allocated to research and development activities may not be translating into immediate financial gains. SACCOs may face challenges in generating positive returns from their R&D efforts.

5.4 Recommendations

5.4.1 Practical Recommendations

Since expansion does not seem to have a significant impact on profitability, SACCOs should consider diversifying their objectives for expansion and focus on other goals such as increasing market share, serving more members, or fulfilling regulatory requirements. Moreover,

SACCOs should conduct thorough cost-benefit analyses before embarking on expansion initiatives and evaluate the financial, operational, and strategic implications of expansion to determine whether it aligns with the organization's goals.

5.4.2 Policy Recommendations

It is recommended that policymakers review and assess the regulatory requirements and incentives related to SACCO expansion and at the same time consider whether there are barriers or regulations that could be hindering expansion efforts unnecessarily. It is also recommended that policy makers provide policy support for financial training and development programs aimed at enhancing the skills and competencies of SACCO staff involved in asset management. Ensuring that SACCOs have a well-prepared team capable of making sound asset replacement decisions is essential for long-term financial stability.

5.4.3 Areas for Further Studies

The study focused on SACCOs in Nairobi County. It is recommended that future studies be conducted to focus on SACCOs in other counties. Moreover, future studies can be conducted to focus on other institutions apart from SACCOS.

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APPENDICES

Appendix A: List of DT Sacco in Nairobi County

1	Afya Sacco Society Limited
2	Airports Sacco Society Limited
3	Ardhi Sacco Society Limited
4	Asili Sacco Society Limited
5	Chai Sacco Society Limited
6	Chuna Sacco Society Limited
7	Defence Sacco Society Limited
8	Elimu Sacco Society Limited
9	Fundilima Sacco Society Limited
10	Harambee Sacco Society Limited
11	Hazina Sacco Society Limited
12	Jamii Sacco Society Limited
13	Kencream Sacco Society Limited
14	Kenpipe Sacco Society Limited
15	Kenversity Sacco Society Limited
16	Kenya Bankers Sac- co Society Limited
17	Kenya National Police DT Sacco Society Limited
18	Kimisitu Sacco Society Limited
19	Kingdom Sacco Society Limited
20	Magereza Sacco Society Limited
21	Maisha Bora Sacco Society Limited
22	Metropolitan National Sacco Society Limited
23	Mwalimu National Sacco Society Limited
24	Mwito Sacco Society Limited
25	Nacico Sacco Society Limited
26	Nafaka DT Sacco Society Limited
27	Nation DT Sacco Society Limited
28	NSSF Sacco Society Limited
29	Nyati Sacco Society Limited

30	Safaricom Sacco Society Limited
31	Sheria Sacco Society Limited
32	Shirika Sacco Society Limited
33	Shoppers Sacco Society Limited
34	Stima DT Sacco Society Limited
35	Strategic-Urembo Sacco Society Limited
36	Taqwa Sacco Society Limited
37	Telepost Sacco Society Limited
38	Tembo Sacco Society Limited
39	Ufanisi DT Sacco Society Limited
40	Ukristo Na Ufanisi Wa Anglicana Sacco Society Limited
41	Ukulima Saco Society Limited
42	Unaitas Sacco Society Limited
43	United Nations Sacco Society Limited
44	Ushuru Sacco Society Limited
45	Wanaanga Sacco Society Limited
46	Wanandege Sacco Society Limited
47	Waumini Sacco Society Limited

Source: **SASRA**

Appendix B: Data Collection Sheet

SACCO	ID	YEAR	EXP	REP	REN	RND	ROI
Afya Sacco Society Ltd	1	2018	0.39	0.133	0.17	0.094	0.132987
Afya Sacco Society Ltd	1	2019	0.400	0.170	0.170	0.075	0.1068172
Afya Sacco Society Ltd	1	2020	0.270	0.158	0.198	0.077	0.162585421
Afya Sacco Society Ltd	1	2021	0.240	0.210	0.250	0.082	0.133116883
Ardhi Sacco Society Ltd	2	2018	0.280	0.190	0.230	0.083	0.1051045
Ardhi Sacco Society Ltd	2	2019	0.280	0.200	0.230	0.081	0.0422402
Ardhi Sacco Society Ltd	2	2020	0.290	0.210	0.200	0.086	0.0075219
Ardhi Sacco Society Ltd	2	2021	0.390	0.133	0.170	0.094	0.132987
Asili Sacco Society Ltd	3	2018	0.400	0.170	0.170	0.075	0.1068172
Asili Sacco Society Ltd	3	2019	0.270	0.158	0.198	0.077	0.162585421
Asili Sacco Society Ltd	3	2020	0.240	0.210	0.250	0.082	0.133116883
Asili Sacco Society Ltd	3	2021	0.530	0.180	0.210	0.088	0.041071
Chai Sacco Society Ltd	4	2018	0.210	0.270	0.270	0.083	0.15798
Chai Sacco Society Ltd	4	2019	0.240	0.090	0.170	0.079	0.286231
Chai Sacco Society Ltd	4	2020	0.230	0.050	0.100	0.081	0.123924
Chai Sacco Society Ltd	4	2021	0.240	0.210	0.230	0.081	0.014789
Chuna Sacco Society Ltd	5	2018	0.310	0.200	0.210	0.092	0.009903
Chuna Sacco Society Ltd	5	2019	0.300	0.190	0.200	0.090	0.055639
Chuna Sacco Society Ltd	5	2020	0.260	0.180	0.200	0.085	0.055639

Chuna Sacco Society Ltd	5	2021	0.520	0.880	0.880	0.183	-0.036364
Elimu Sacco Society Ltd	6	2018	0.250	0.660	0.660	0.113	-0.048387
Elimu Sacco Society Ltd	6	2019	0.150	0.530	0.530	0.095	0.025641
Elimu Sacco Society Ltd	6	2020	0.280	0.190	0.230	0.083	0.1051045
Elimu Sacco Society Ltd	6	2021	0.280	0.200	0.230	0.081	0.0422402
Fundilima Sacco Society Ltd	7	2018	1.600	0.360	0.360	0.205	-0.162963
Fundilima Sacco Society Ltd	7	2019	1.170	0.120	0.150	0.096	0.057143
Fundilima Sacco Society Ltd	7	2020	0.420	0.180	0.270	0.083	0.021834
Fundilima Sacco Society Ltd	7	2021	0.350	0.210	0.240	0.088	0.017383
Hazina Sacco Society Ltd	8	2018	0.530	0.180	0.210	0.088	0.041071
Hazina Sacco Society Ltd	8	2019	0.120	0.150	0.170	0.127	-0.399463
Hazina Sacco Society Ltd	8	2020	0.190	0.090	0.110	0.144	-0.888016
Hazina Sacco Society Ltd	8	2021	1.170	0.120	0.150	0.096	0.057143
Jamii Sacco Society Ltd	9	2018	0.810	0.790	0.790	0.094	0.009709
Jamii Sacco Society Ltd	9	2019	0.800	0.810	0.810	0.146	-0.117647
Jamii Sacco Society Ltd	9	2020	0.670	0.600	0.600	0.117	-0.06015
Jamii Sacco Society Ltd	9	2021	0.810	0.790	0.790	0.094	0.009709
Kenpipe Sacco Society Ltd	10	2018	0.240	0.300	0.300	0.078	0.131474
Kenpipe Sacco Society Ltd	10	2019	0.280	0.540	0.560	0.072	0.133871
Kenpipe Sacco Society Ltd	10	2020	0.260	0.260	0.410	0.015	0.428571
Kenpipe Sacco Society Ltd	10	2021	0.290	0.300	0.310	0.111	-0.258849

Kenversity Sacco Society Ltd	11	2018	0.240	0.290	0.300	0.095	0.008247
Kenversity Sacco Society Ltd	11	2019	0.300	0.180	0.200	0.117	-0.251407
Kenversity Sacco Society Ltd	11	2020	0.230	0.120	0.130	0.109	-0.48
Kenversity Sacco Society Ltd	11	2021	0.390	0.133	0.170	0.094	0.132987
Kenya Bankers Sacco Society Ltd	12	2018	0.400	0.170	0.170	0.075	0.1068172
Kenya Bankers Sacco Society Ltd	12	2019	0.800	0.810	0.810	0.146	-0.117647
Kenya Bankers Sacco Society Ltd	12	2020	0.670	0.600	0.600	0.117	-0.06015
Kenya Bankers Sacco Society Ltd	12	2021	0.540	0.440	0.470	0.125	-0.131737
Kenya National Police	13	2018	0.230	0.050	0.100	0.081	0.123924
Kenya National Police	13	2019	0.800	0.810	0.810	0.146	-0.117647
Kenya National Police	13	2020	0.670	0.600	0.600	0.117	-0.06015
Kenya National Police	13	2021	0.810	0.790	0.790	0.094	0.009709
Kingdom Sacco Society Ltd	14	2018	0.400	0.580	0.590	0.128	-0.107692
Kingdom Sacco Society Ltd	14	2019	0.360	0.560	0.580	0.110	-0.065574
Kingdom Sacco Society Ltd	14	2020	0.360	0.560	0.580	0.110	-0.065574
Kingdom Sacco Society Ltd	14	2021	0.480	0.940	0.940	0.211	-0.212766
Magereza Sacco Society Ltd	15	2018	0.240	0.210	0.230	0.081	0.014789
Magereza Sacco Society Ltd	15	2019	0.310	0.200	0.210	0.092	0.009903
Magereza Sacco Society Ltd	15	2020	0.300	0.190	0.200	0.090	0.055639
Magereza Sacco Society Ltd	15	2021	0.360	0.560	0.580	0.110	-0.065574
Maisha Bora Sacco Society Ltd	16	2018	0.480	0.940	0.940	0.211	-0.212766

Maisha Bora Sacco Society Ltd	16	2019	0.520	0.880	0.880	0.183	-0.036364
Maisha Bora Sacco Society Ltd	16	2020	0.250	0.660	0.660	0.113	-0.048387
Maisha Bora Sacco Society Ltd	16	2021	0.150	0.530	0.530	0.095	0.025641
Metropolitan National Sacco Society Ltd	17	2018	2.170	1.250	1.250	0.096	0.011173
Metropolitan National Sacco Society Ltd	17	2019	0.490	0.840	0.840	0.095	0.022346
Metropolitan National Sacco Society Ltd	17	2020	1.080	0.910	0.910	0.126	-0.070588
Metropolitan National Sacco Society Ltd	17	2021	0.400	0.580	0.590	0.128	-0.107692
Mwalimu National Sacco Society Ltd	18	2018	0.240	0.300	0.300	0.078	-0.065574
Mwalimu National Sacco Society Ltd	18	2019	0.280	0.540	0.560	0.072	-0.131737
Mwalimu National Sacco Society Ltd	18	2020	0.260	0.260	0.410	0.015	-0.107692
Mwalimu National Sacco Society Ltd	18	2021	0.290	0.300	0.310	0.111	-0.065574
Mwito Sacco Society Ltd	19	2018	0.240	0.290	0.300	0.095	0.008247
Mwito Sacco Society Ltd	19	2019	0.300	0.180	0.200	0.117	-0.251407
Mwito Sacco Society Ltd	19	2020	0.230	0.120	0.130	0.109	-0.48
Mwito Sacco Society Ltd	19	2021	0.390	0.133	0.170	0.094	0.132987
Nacico Sacco Soci- ety Ltd	20	2018	0.400	0.170	0.170	0.075	0.1068172
Nacico Sacco Soci- ety Ltd	20	2019	0.800	0.810	0.810	0.146	-0.117647
Nacico Sacco Soci- ety Ltd	20	2020	0.670	0.600	0.600	0.117	-0.06015
Nacico Sacco Soci- ety Ltd	20	2021	0.540	0.440	0.470	0.125	-0.131737
Nafaka DT Sacco Society Ltd	21	2018	0.230	0.050	0.100	0.081	0.123924
Nafaka DT Sacco Society Ltd	21	2019	0.800	0.810	0.810	0.146	-0.117647

Nafaka DT Sacco Society Ltd	21	2020	0.670	0.600	0.600	0.117	-0.06015
Nafaka DT Sacco Society Ltd	21	2021	0.810	0.790	0.790	0.094	0.009709
Nation DT Sacco Society Ltd	22	2018	0.400	0.580	0.590	0.128	0.009709
Nation DT Sacco Society Ltd	22	2019	0.360	0.560	0.580	0.110	0.131474
Nation DT Sacco Society Ltd	22	2020	0.360	0.560	0.580	0.110	0.133871
Nation DT Sacco Society Ltd	22	2021	0.480	0.940	0.940	0.211	0.428571
NSSF Sacco Soci- ety Ltd	23	2018	0.240	0.210	0.230	0.081	0.014789
NSSF Sacco Soci- ety Ltd	23	2019	0.310	0.200	0.210	0.092	0.009903
NSSF Sacco Soci- ety Ltd	23	2020	0.300	0.190	0.200	0.090	0.055639
NSSF Sacco Soci- ety Ltd	23	2021	0.360	0.560	0.580	0.110	-0.065574
Nyati Sacco Society Ltd	24	2018	0.480	0.940	0.940	0.211	-0.212766
Nyati Sacco Society Ltd	24	2019	0.520	0.880	0.880	0.183	-0.036364
Nyati Sacco Society Ltd	24	2020	0.250	0.660	0.660	0.113	-0.048387
Nyati Sacco Society Ltd	24	2021	0.150	0.530	0.530	0.095	0.025641
Safaricom Sacco Society Ltd	25	2018	2.170	1.250	1.250	0.096	0.011173
Safaricom Sacco Society Ltd	25	2019	0.490	0.840	0.840	0.095	0.022346
Safaricom Sacco Society Ltd	25	2020	1.080	0.910	0.910	0.126	0.009709
Safaricom Sacco Society Ltd	25	2021	0.400	0.580	0.590	0.128	0.131474
Sheria Sacco Society Ltd	26	2018	0.360	0.560	0.580	0.110	0.133871
Sheria Sacco Society Ltd	26	2019	0.540	0.440	0.470	0.125	0.428571
Sheria Sacco Society Ltd	26	2020	0.400	0.580	0.590	0.128	0.009709

Sheria Sacco Society Ltd	26	2021	0.360	0.560	0.580	0.110	0.131474
Shirika DT Sacco Society Ltd	27	2018	0.360	0.560	0.580	0.110	0.133871
Shirika DT Sacco Society Ltd	27	2019	0.480	0.940	0.940	0.211	0.428571
Shirika DT Sacco Society Ltd	27	2020	0.240	0.210	0.230	0.081	0.014789
Shirika DT Sacco Society Ltd	27	2021	0.310	0.200	0.210	0.092	0.009903
Shoppers Sacco Society Ltd	28	2018	0.300	0.190	0.200	0.090	0.055639
Shoppers Sacco Society Ltd	28	2019	0.360	0.560	0.580	0.110	0.009709
Shoppers Sacco Society Ltd	28	2020	0.480	0.940	0.940	0.211	0.131474
Shoppers Sacco Society Ltd	28	2021	0.520	0.880	0.880	0.183	0.133871
Stima DT Sacco Society Ltd	29	2018	0.250	0.660	0.660	0.113	0.428571
Stima DT Sacco Society Ltd	29	2019	0.150	0.530	0.530	0.095	0.025641
Stima DT Sacco Society Ltd	29	2020	2.170	1.250	1.250	0.096	0.011173
Stima DT Sacco Society Ltd	29	2021	0.490	0.840	0.840	0.095	0.022346
Taqwa Sacco Soci- ety Ltd	30	2018	1.080	0.910	0.910	0.126	-0.070588
Taqwa Sacco Soci- ety Ltd	30	2019	0.400	0.580	0.590	0.128	-0.107692
Taqwa Sacco Soci- ety Ltd	30	2020	0.240	0.300	0.300	0.078	0.131474
Taqwa Sacco Soci- ety Ltd	30	2021	0.280	0.540	0.560	0.072	0.133871
Telepost Sacco Society Ltd	31	2018	0.260	0.260	0.410	0.015	0.428571
Telepost Sacco Society Ltd	31	2019	0.290	0.300	0.310	0.111	-0.25885
Telepost Sacco Society Ltd	31	2020	0.240	0.290	0.300	0.095	0.008247
Telepost Sacco Society Ltd	31	2021	0.300	0.180	0.200	0.117	0.009709

Tembo Sacco Society Ltd	32	2018	0.230	0.120	0.130	0.109	0.131474
Tembo Sacco Society Ltd	32	2019	0.390	0.133	0.170	0.094	0.133871
Tembo Sacco Society Ltd	32	2020	0.400	0.170	0.170	0.075	0.428571
Tembo Sacco Society Ltd	23	2021	0.800	0.810	0.810	0.146	-0.11765
Ufanisi DT Sacco Society Ltd	33	2018	0.670	0.600	0.600	0.117	-0.06015
Ufanisi DT Sacco Society Ltd	33	2019	0.150	0.530	0.530	0.095	0.009709
Ufanisi DT Sacco Society Ltd	33	2020	2.170	1.250	1.250	0.096	0.131474
Ufanisi DT Sacco Society Ltd	33	2021	0.490	0.840	0.840	0.095	0.1625854
Ukristo Na Ufanisi	34	2018	1.080	0.910	0.910	0.126	0.1331168
Ukristo Na Ufanisi	34	2019	0.400	0.580	0.590	0.128	0.1051045
Ukristo Na Ufanisi	34	2020	0.360	0.560	0.580	0.110	0.0422402
Ukristo Na Ufanisi	34	2021	0.540	0.440	0.470	0.125	0.428571
Ukulima Saco Soci- ety Ltd	35	2018	0.400	0.580	0.590	0.128	-0.107692
Ukulima Saco Soci- ety Ltd	35	2019	0.360	0.560	0.580	0.110	-0.065574
Ukulima Saco Soci- ety Ltd	35	2020	0.360	0.560	0.580	0.110	-0.065574
Ukulima Saco Soci- ety Ltd	35	2021	0.480	0.940	0.940	0.211	-0.212766
Unaitas Sacco Society Ltd	36	2018	0.240	0.210	0.230	0.081	0.014789
Unaitas Sacco Society Ltd	36	2019	0.310	0.200	0.210	0.092	0.009903
Unaitas Sacco Society Ltd	36	2020	0.300	0.190	0.200	0.090	0.055639
Unaitas Sacco Society Ltd	36	2021	0.360	0.560	0.580	0.110	-0.065574
United Nations Sacco Society Ltd	37	2018	0.390	0.133	0.170	0.094	0.132987

United Nations Sacco Society Ltd	37	2019	0.400	0.170	0.170	0.075	0.1068172
United Nations Sacco Society Ltd	37	2020	0.270	0.158	0.198	0.077	0.162585
United Nations Sacco Society Ltd	37	2021	0.240	0.210	0.250	0.082	0.133117
Wanaanga Sacco Society Ltd	38	2018	0.280	0.190	0.230	0.083	0.1051045
Wanaanga Sacco Society Ltd	38	2019	0.280	0.200	0.230	0.081	0.0422402
Wanaanga Sacco Society Ltd	38	2020	0.290	0.210	0.200	0.086	0.0075219
Wanaanga Sacco Society Ltd	38	2021	0.390	0.133	0.170	0.094	0.132987
Wanandege Sacco Society Ltd	39	2018	0.400	0.170	0.170	0.075	0.1068172
Wanandege Sacco Society Ltd	39	2019	0.270	0.158	0.198	0.077	0.162585
Wanandege Sacco Society Ltd	39	2020	0.240	0.210	0.250	0.082	0.133116
Wanandege Sacco Society Ltd	39	2021	0.530	0.180	0.210	0.088	0.041071
Waumini Sacco Society Ltd	40	2018	0.210	0.270	0.270	0.083	0.15798
Waumini Sacco Society Ltd	40	2019	0.250	0.660	0.660	0.113	-0.048387
Waumini Sacco Society Ltd	40	2020	0.150	0.530	0.530	0.095	0.025641
Waumini Sacco Society Ltd	40	2021	2.170	1.250	1.250	0.096	0.011173